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No. 3107

United States 1143
Circuit Court of Appeals
For the Ninth Circuit. /

PENN DEVELOPMENT COMPANY, a Corporation,

Appellant,

against

C. E. STONER, F. E. SCHAAD, D. L. PETERS,
E. B. RHODES, and S. W. ODELL late Directors and Now Trustees of Ventura-California Oil Company, a Corporation; PACIFIC PETROLEUM COMPANY, a Corporation, and W. H. COCHRAN,

Appellees.

Transcript of Record.

Upon Appeal from the United States District Court for
the Southern District of California,
Southern Division.

FILED
JAN 21 1918
F. D. MONCKTON,
CLERK.

No.

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Circuit Court of Appeals
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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original record are printed literally in italic; and, likewise, cancelled matter appearing in the original record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italics the two words between which the omission seems to occur.]

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Names and Addresses of Attorneys.

For Defendant and Appellant Penn Development Company:

THEODORE MARTIN, Esquire, and WILLIAM H. COCHRAN, Esquire, Suite 918 Security Building, Los Angeles, California.

For Plaintiffs and Appellees:

TANNER, ODELL, ODELL & TAFT, Esquires, 901-21 California Building, Los Angeles, California; 202-4 Dudley Block, Santa Monica, California; Boston Block, Pasadena, California; and PEYTON H. MOORE, Esquire, Black Building, Los Angeles, California.

For Defendant and Appellee Pacific Petroleum Company, a Corporation:

PORTER & SUTTON, Esquires, Central Building, Los Angeles, California.

Citation on Appeal.

United States of America—ss.

The President of the United States to C. E. Stoner, F. E. Schaad, D. L. Peters, E. B. Rhodes and S. W. Odell, late Directors and now Trustees of Ventura-California Oil Company, a corporation; Pacific Petroleum Company, a corporation; and W. H. Cochran.

You, and each of you, are hereby cited and admonished to be and appear at a United States Circuit Court of Appeals for the Ninth Circuit, to be holden at the city of San Francisco, in the state of California, within thirty days from the date hereof, pursuant to the order allowing an appeal entered January 31, 1917, and of record in the clerk's office of the District Court of the United States for the Southern District of California, Southern Division, in suit in Equity No. B-7 therein, and wherein Penn Development Company, a corporation, is a defendant and appellant, and wherein you, C. E. Stoner, F. E. Schaad, D. L. Peters, E. B. Rhodes and S. W. Odell, late directors and now trustees of Ventura-California Oil Company, a corporation, are plaintiffs and appellees, and you, Pacific Petroleum Company, a corporation, and you, W. H. Cochran, are also defendants and appellees, to show cause, if any there be, why the final decree of the said court made and entered in the said action on the first day of August, 1916, should not be corrected, and why speedy justice should not be done to the parties in that behalf.

Witness, the Honorable Oscar A. Trippet, United States District Judge for the Southern District of Cali-

fornia, Southern Division, this 31st day of January, 1917.

OSCAR A. TRIPPET,
United States District Judge.

[Endorsed]: B 7 Eq. Dept. . . In the District Court of the United States, Southern District of California, Southern Division. C. E. Stoner et al., plaintiffs, vs. Pacific Petroleum Company et al., defendants. Citation on Appeal. Due and timely service of a copy of the within citation on appeal is hereby admitted this 2d day of February, 1917. Porter & Sutton, attorneys for defendant Pacific Petroleum Company. Wm. H. Cochran, defendant in person. Received a copy of the within, reserving all rights and objections, this 2nd day of February, 1917. Tanner, Odell & Taft, attys. for pltf. Filed Feb. 23, 1917. Wm. M. Van Dyke, clerk; by T. F. Green, deputy clerk. Theodore Martin, suite 918 Security Building, Home phone F 5834, Sunset Main 488, Los Angeles, Cal., solicitor for dft. and appellant Penn Development Company.

*In the Superior Court of the State of California, in
and for the County of Ventura.*

VENTURA CALIFORNIA OIL COMPANY, a Corporation,

Plaintiff,

vs.

PACIFIC PETROLEUM COMPANY, a Corporation, STEPHEN W. DORSEY, PENN DEVELOPMENT COMPANY, W. H. COCHRAN, JOHN DOE, RICHARD ROE, JANE DOE and MARY ROE,

Defendants.

Complaint to Foreclose Contract of Sale.

Plaintiff complains of the defendants and alleges:

I.

That plaintiff is a corporation organized under the laws of the state of California; that the Pacific Petroleum Company and the Penn Development Company are corporations organized under the laws of the state of Delaware; that the defendants John Doe, Richard Roe, Jane Doe and Mary Roe are sued by fictitious names, and as soon as their true names shall have been ascertained they will be substituted by proper amendments.

II.

That on the 22nd day of July, 1913, the plaintiff and the defendant Stephen W. Dorsey entered into a contract by which the plaintiff agreed to sell and said Dorsey agreed to buy 569.54 acres of land situate in the Little Sespe petroleum district in the county of Ventura, state of California, particularly described as follows:

The Agasthenes Oil Placer Mining Claim, embracing lots four (4), five (5), ten (10) and eleven (11), containing one hundred and twenty and 69/100 (120.69) acres.

The Agapetus Oil Placer Mining Claim, embracing lot nine (9) and the north one-half ($\frac{1}{2}$) of the southeast quarter and the northeast quarter of the southwest quarter, containing one hundred and sixty (160) acres.

The Agapenor Oil Placer Mining Claim, embracing lots six (6) and eight (8) and the west half of lot seven (7), containing one hundred sixty (160) acre.

The Agareni Oil Placer Mining Claim, embracing lots one (1), two (2) and three (3) and the east one-half of lot seven (7), containing one hundred twenty-eight and $85/100$ (128.85) acres.

All in section 5, in the township 4 north, range 19 west, San Bernardino Base and Meridian, according to the surveys made by the United States Government, and all situate in the Little Sespe Petroleum Mining District, in the county of Ventura, state of California, United States of America, and containing a total of 569.54 acres.

Together with the oil wells situate thereon, and the personal property thereon, used in connection therewith, including pumps, tanks, derricks, pipe lines, casing, drilling rigs, boilers and other tools and appliances.

According to the terms and conditions contained in a written contract, a copy of which contract is hereto annexed, marked Exhibit "A," and made a part hereof, which said contract was duly acknowledged and thereafter recorded in the recorder's office of Ventura county on the 19th day of October, 1913, in book 139, at page 34, of the records of said office; that in and by said agreement, and as the purchase price therefor, the defendant agreed to transfer and assign within thirty days of the date of said agreement eleven thousand shares of the Pacific Petroleum Company, one of said defendants, of the par value of \$110,000, and \$25,000 par value of first mortgage bonds of said Pacific Petroleum Company, and to pay in cash \$15,000, on or before November 1, 1913, and assumed and agreed to pay an indebtedness secured by a trust deed then

existing against said property and held by the Citizens Trust & Savings Bank as trustee for certain notes made to Benson Investment Company, a corporation, and by it assigned to certain individuals residing in England; that the total amount of the issue of said notes secured by said trust deed to said Citizens Trust & Savings Bank was the sum of \$50,000, but at the time when the said agreement was entered into the total amount owing thereon was the sum of \$25,000 and interest, and that the assumption of said lien and the payment thereof was a part of the consideration of the purchase of said property.

III.

That thereafter the said Stephen W. Dorsey assigned his contract of purchase to the defendant the Pacific Petroleum Company by a written assignment bearing date of June 24, 1913, a copy of which assignment is hereto annexed, marked Exhibit "B"; that said assignment was duly acknowledged and on the 19th day of October, 1913, duly recorded in the recorder's office of said Ventura county in book 139, at page 36; that in and by said assignment the said defendant Pacific Petroleum Company agreed to perform all the covenants on the part of said Dorsey contained in said contract to be performed and assumed and agreed to pay all the payments provided therein and to pay and satisfy the indebtedness secured by the trust deed mentioned therein.

IV.

That thereafter on the 17th day of February, 1914, as plaintiff is informed and believes and upon such information and belief alleges, the defendant the

Pacific Petroleum Company and the defendant the Penn Development Company entered into an agreement without the knowledge or consent of plaintiff whereby it was agreed that the Pacific Petroleum Company should allow the property of this plaintiff to be sold by virtue of the terms of said trust deed for a failure to pay the interest thereon and which had theretofore accrued and which the said Pacific Petroleum Company had failed to pay when due, and on account of a failure to pay which the said Citizens Trust & Savings Bank, trustee, had been compelled to advertise for sale at the demand of the holders of the notes for \$25,000 secured by said trust deed, and had advertised to be sold on or about the 11th day of March, 1914; and plaintiff further alleges upon information and belief that the said defendants the Pacific Petroleum Company and the Penn Development Company entered into such agreement for the express purpose of depriving the plaintiff of its title to said lands, and of endeavoring to defeat and annul the contract between the said Dorsey and plaintiff, and assigned to said Pacific Petroleum Company by said Dorsey, and to deprive plaintiff wrongfully, illegally and unlawfully of the compensation therein provided for and to be paid therefor.

V.

That the defendant Cochran was the general agent, counsel and representative of said Penn Development Company in negotiating with the Pacific Petroleum Company for the purchase by Penn Development Company of a large number of properties consisting of leasehold interests, contracts for purchase and other

interests in oil property which the Penn Development Company desired to take over and purchase, including the said purchase contract made by plaintiff to said Dorsey and by him assigned to said Pacific Petroleum Company, and the said Penn Development Company through the said Cochran represented to the plaintiff at a date prior to said March 11, 1914, the date on which the sale of the Ventura California Oil Company property was advertised by the Citizens Trust & Savings Bank, trustee, that the said Penn Development Company was undertaking to perform all the conditions of said contract made by the said Ventura California Oil Company, including the payment of the \$15,000 in cash which should have been paid November 1, 1913, and the redemption of the promise of the Pacific Petroleum Company to furnish \$25,000 par value of first mortgage bonds and the substitution for the \$110,000 par value of capital stock of the Pacific Petroleum Company with shares of the Penn Development Company, so that the Ventura California Oil Company should have and receive its full compensation for said property, and for such purpose that he, the said Cochran, as trustee for the Penn Development, would bid in the property at said sale at the request of the Pacific Petroleum Company, and that immediately after said sale the conditions of said contract of the Ventura California Oil Company would be fully performed, and plaintiff alleges that at the request of the said Pacific Petroleum Company and as a part performance of its contract the said Cochran, as trustee for the Penn Development Company, did bid in and purchase the said property of the California Oil

Company at said sale and advanced the money to pay the same.

VI.

Plaintiff alleges further that though demand has been made upon said Pacific Petroleum Company, the said Penn Development Company and the defendant Cochran to perform the further conditions contained in said contract of the Ventura California Oil Company, they have failed and refused so to do, but are claiming that the Ventura California Oil Company has no interest in said property by reason of such sale under the trust deed aforesaid; that the plaintiff has demanded the payment of the \$15,000 and that bonds in the sum of \$25,000 to be delivered to it as agreed, but such payment has not been made, nor have such bonds been delivered nor has the stock of the Penn Development Company been substituted for or turned over to plaintiff in lieu of the capital stock of the Pacific Petroleum Company as represented, and plaintiff alleges that there is past due the sum of \$15,000 with interest at the rate of 7% per annum from November 1, 1913, that the bonds provided in such agreement to be issued and paid over to plaintiff would have been on the 1st day of November, 1913, intrinsically worth the sum of \$25,000, with interest at the rate of 6% per annum, and that the intrinsic value of 11,000 shares of Pacific Petroleum Company on said date was the sum of \$110,000; that said defendant Dorsey did turn over to plaintiff 11,000 shares of the capital stock of Pacific Petroleum Company, but plaintiff alleges that by reason of the action of said company in turning over its assets to Penn Development

Company as above set forth, the said shares have become and are worthless unless redeemed by said Penn Development Company as agreed, and that the said Penn Development Company has failed to redeem the same.

VII.

That the Ventura California Oil Company, after due demand upon defendants for performance, by resolution duly passed on the 21st day of April, 1914, elected to declare a forfeiture of the terms of said contract by it made to the said Dorsey and assigned to the Pacific Petroleum Company and assumed by the said Penn Development Company.

That the defendants John Doe, Richard Roe, Jane Doe and Mary Roe claim to have some interest in said property, but their interests, if any, are subsequent to and subject to the right and interests of plaintiff.

Wherefore, plaintiff prays judgment as follows:

That it be adjudged that the defendants shall forthwith pay to the plaintiff the sum of \$15,000 cash, with interest thereon from the 1st day of November, 1913, at the legal rate of interest, 7%; the sum of \$25,000, being the value of said bonds, together with interest thereon at the rate of 6% from November 1, 1913; and the sum of \$110,000, being the value of the shares of the Pacific Petroleum Company, with interest thereon at the rate of 7% from November 1, 1913; and that unless such payment be made within ten days from the judgment of said court the defendants and all of them and each of them be forever foreclosed of any right, title or interest to the premises or any part thereof and the personal property, or any part thereof,

and be adjudged to deliver up possession of all of said property to the plaintiff; and for such other and further relief as equity may require.

TANNER, ODELL, ODELL & TAFT,

By S. W. ODELL,

M. K. YOUNG.

Attorneys for Plaintiff.

EXHIBIT "A."

AGREEMENT.

This agreement, made by and between Ventura California Oil Company, a corporation, organized under the laws of the state of California, having its principal place of business in the city of Los Angeles, in said state, party of the first part, and Stephen W. Dorsey, of said city, party of the second part, witnesseth:

Whereas, heretofore party of the first part has given to party of the second part an option to purchase the premises hereinafter mentioned, and the terms of said option have not been complied with, but a new agreement has been entered into,

Now, therefore, it is agreed

The party of the first part, in consideration of such previous agreement and one dollar (\$1.00) to it in hand paid, receipt whereof is hereby acknowledged, and of the covenants upon the part of the party of the second part to be performed, as hereinafter set forth, does hereby agree to sell to the party of the second part all its right and title in and to that tract of five hundred sixty-nine and fifty-four hundredths (\$569.54) acres of land situate in the Little Sespe Petroleum District, in

the county of Ventura, state of California, particularly described as follows:

The Agasthenes Oil Placer Mining Claim, embracing lots four (4), five (5), ten (10), and eleven containing one hundred and twenty and $\frac{69}{100}$ (120.69) acres.

The Agapetus Oil Placer Mining Claim, embracing lot nine (9) and the north one-half ($\frac{1}{2}$) of the southeast quarter and the northeast quarter of the southwest quarter, containing one hundred and sixty (160) acres.

The Agapenor Oil Placer Mining Claim, embracing lots 6 and 8 and the west half of lot 7, containing 160 acres.

The Agareni Oil Placer Mining Claim, embracing lots 1, 2 and 3 and the east one-half of lot 7, containing 128.85 acres.

All in section 5, in the township 4 north, range 19 west, San Bernardino Base and Meridian, according to the surveys made by the United States Government, and all situate in the Little Sespe Petroleum Mining District, in the county of Ventura, state of California, United States of America, and containing a total of 569.54 acres.

Together with the oil wells situate thereon, and the personal property thereon, used in connection therewith, including pumps, tanks, derricks, pipe lines, casing, drilling rigs, boilers and other tools and appliances.

Party of the second part hereby agrees to buy said property and to pay for the same in the following additional sums, to-wit:

To transfer and assign within thirty days from the date hereof eleven thousand (11,000) shares of Pacific Petroleum Company of the par value of one hundred and ten thousand dollars (\$110,000) and twenty-five thousand dollars (\$25,000) par value of first mortgage bonds of said Pacific Petroleum Company, a corporation organized under the laws of the state of Delaware.

Fifteen thousand dollars (\$15,000) in cash, lawful money of the United States, on or before November 1, 1913.

To assume and agree to pay an indebtedness secured by trust deed now a lien against said property, the Citizens Trust & Savings Bank being the trustee, said sum being payable at said bank in Los Angeles, California.

It is understood and agreed that the party of the second part shall pay all taxes and assessments now a lien upon or hereafter levied against said property, it being understood that the taxes have been paid for the fiscal year 1912-13, and that the party of the second part shall enter into possession of said premises with the right and privilege of operating the oil wells thereon, improving said property, drilling oil wells thereon and extracting and selling therefrom oil and other mineral products during the time of the performance of this contract or until a breach thereof.

It is further understood and agreed that should the party of the second part fail to pay any of the sums above provided to be paid or transfer to the party of the first part the bonds or the capital stock above mentioned, then and in such case the party of the first part may proceed to collect the value thereof by any

proper action or may foreclose this contract, and in such case the party of the second part shall forfeit all moneys, bonds or stocks theretofore paid hereon and shall quit and deliver up said premises, and should an action be brought for either of said purposes the party of the second part agrees to pay all reasonable costs of such action, including a reasonable attorney fee to be taxed by the court.

Upon full payment being made, as herein agreed, the party of the first part agrees to make, execute and deliver sufficient deeds to transfer all of its title to the party of the second part and to deliver to the party of the second part its abstract of title upon said lands.

This agreement shall be binding upon the successors or assigns of the party of the first part and upon the heirs, administrators and assigns of the party of the second part.

In witness whereof the party of the first part has hereunto affixed its corporate seal and caused these presents to be signed by its president and secretary as of the 22nd day of July, 1913, and the party of the second part has hereunto set his hand and seal.

VENTURA CALIFORNIA OIL COMPANY,

(Seal)

By S. W. Odell, Prest.

D. L. Peters, Sec'y.

STEPHEN W. DORSEY.

State of California, County of Los Angeles—ss.

On this 13th day of August, A. D. 1913, before me, Ethel D. Rhoades, a notary public in and for the said county and state, residing therein, duly commissioned and sworn, personally appeared S. W. Odell, known to me to be the president, and D. L. Peters, known to me

to be the secretary of the Ventura-California Oil Company, the corporation that executed the within instrument, known to me to be the persons who executed the within instrument, on behalf of the corporation therein named, and acknowledged to me that such corporation executed the same.

In witness whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

(Seal)

ETHEL B. RHOADES,

Notary Public in and for Said County, State of California.

State of California, County of Los Angeles—ss.

On this 13th day of August, 1913, before me, Ethel B. Rhoades, a notary public in and for said county, personally appeared Stephen W. Dorsey, known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.

Witness my hand and official seal.

(Seal)

ETHEL B. RHOADES,

Notary Public Los Angeles County, California.

EXHIBIT "B."

ASSIGNMENT.

This indenture, made by and between Stephen W. Dorsey, of the county of Los Angeles, state of California, party of the first part, and Pacific Petroleum Company, a corporation organized under the laws of the state of Delaware, witnesseth:

Party of the first part does hereby assign, transfer

and set over to the party of the second part, in consideration of ten dollars (\$10.00) and other value, to him in hand paid, receipt whereof is hereby acknowledged, that agreement made by and between Ventura-California Oil Company, a corporation, and the said Stephen W. Dorsey, dated the 22nd day of July, 1913, whereby said Ventura-California Oil Company agreed to sell, and said Stephen W. Dorsey agreed to buy, that certain five hundred sixty-nine and fifty-four hundredths (569.54) acres of land situated in the Little Sespe Petroleum District, county of Ventura, state of California, described as lots one (1), two (2), three (3), four (4), five (5), six (6), seven (7), eight (8), nine (9), ten (10) and eleven (11), and the north half of the southeast quarter and the northeast quarter of the southwest quarter, all in section five (5), township fourteen (14) north, range nineteen (19) west, S. B. B. & M., subject to all the conditions contained in said agreement upon the part of the party of the first part herein to be performed and which the party of the second part herein agrees to perform.

In witness whereof, the said party of the first part has hereunto set his hand and seal this 24th day of July, 1913.

STEPHEN W. DORSEY. (Seal)

State of California, County of Los Angeles—ss.

On this 16th day of August, 1913, before me, S. D. Odell, a notary public in and for said county, personally appeared Stephen W. Dorsey, known to me to be the

person whose name is subscribed to the within instrument, and acknowledged that he executed the same.

Witness my hand and official seal.

(Seal)

S. W. ODELL,

Notary Public in and for Said County and State.

State of California, County of Los Angeles—ss.

S. W. Odell, being duly sworn, deposes and says: That he is president of the plaintiff corporation in the foregoing and above entitled action; that he has heard read the foregoing complaint and knows the contents thereof, and that the same is true of his own knowledge, except as to the matters and things stated on his information and belief, and that as to those matters and things he believes it to be true.

S. W. ODELL.

Subscribed and sworn to before me this 28th day of April, 1914.

(Seal)

ROBT. A. ODELL,

Notary Public in and for Said County of Los Angeles,
State of California.

[Endorsed]: No. 5190. Book . . , page . . In the Superior Court of the state of California in and for the county of Ventura. Ventura California Oil Company, a corporation, plaintiff, vs. Pacific Petroleum Company, a corporation, *et al.*, defendants. Complaint to Foreclose Contract of Sale. (Endorsed) Filed Apr. 29, 1914. J. B. McCloskey, clerk; by L. E. Hallowell, deputy clerk.

*In the District Court of the United States, Southern
District of California, Southern Division.*

VENTURA CALIFORNIA OIL COMPANY, a Corporation,

Plaintiff,

vs.

PACIFIC PETROLEUM COMPANY, a Corporation,
STEPHEN W. DORSEY, PENN DEVELOPMENT COMPANY,
JOHN DOE, RICHARD ROE, JANE DOE and MARY ROE and
W. H. COCHRAN,

Defendants.

**Second Amended Complaint to Quiet Title and
Foreclose Contract.**

Leave of court being had to amend its complaint,
plaintiff complains of the defendants and alleges:

I.

That the plaintiff is a corporation organized under the laws of the state of California; that the Pacific Petroleum Company and Penn Development Company are corporations organized under the laws of the state of Delaware; that the defendants John Doe, Richard Roe, Jane Doe and Mary Roe are sued by fictitious names, and as soon as their true names shall have been ascertained they will be substituted by proper amendments.

II.

That the plaintiff is the owner of and in possession of the following described real estate situated in the county of Ventura, state of California, particularly described as follows:

The Agasthenes Oil Placer Mining Claim, embracing lots four (4), five (5), ten (10) and eleven (11), containing one hundred and twenty and 69/100 (120.69) acres.

The Agapetus Oil Placer Mining Claim, embracing lot nine (9) and the north one-half ($\frac{1}{2}$) of the south-east quarter and the northeast quarter of the south-west quarter, containing one hundred and sixty (160) acres.

The Agapesor Oil Placer Mining Claim, embracing lots six (6) and eight (8) and the west half of lot seven (7) containing one hundred sixty (160) acres.

The Agareni Oil Placer Mining Claim, embracing lots one (1), two (2) and three (3) and the east one-half of lot seven (7) containing one hundred twenty-eight and 85/100 (128.85) acres.

All in section 5, in the township 4, north range 19 west, San Bernardino base and meridian, according to the surveys made by the United States Government, and all situate in the Little Sespe Petroleum Mining District, in the county of Ventura, state of California, United States of America, and containing a total of 569.54 acres.

Together with the oil wells situate thereon, and the personal property thereon, used in connection therewith, including pumps, tanks, derricks, pipe lines, casings, drilling rigs, boilers and other tools and appliances.

III.

That the defendants claim to have some interest in said premises or to some portion thereof, but plaintiff alleges that they have not nor have either or any of

them any right, title or interest therein or to any part thereof.

Second Cause of Action.

For further and second cause of action plaintiff alleges:

I.

That plaintiff is a corporation organized under the laws of the state of California; that the Pacific Petroleum Company and the Penn Development Company are corporations organized under the laws of the state of Delaware; that the defendants John Doe, Richard Roe, Jane Doe and Mary Poe are sued by fictitious names, and as soon as their true names shall have been ascertained they will be substituted by proper amendments.

II.

That on the 22nd day of July, 1913, the plaintiff and the defendant Stephen W. Dorsey entered into a contract by which the plaintiff agreed to sell and said Dorsey agreed to buy 569.54 acres of land situate in the Little Sespe Petroleum District in the county of Ventura, state of California, particularly described as follows:

The Agasthenes Oil Placer Mining Claim, embracing lots four (4), five (5), ten (10) and eleven (11), one hundred and twenty and 69/100 (120.69) acres.

The Agapetus Oil Placer Mining Claim, embracing lot nine (9) and the north one-half ($\frac{1}{2}$) of the south-east quarter and the northeast quarter of the south-west quarter, containing one hundred and sixty (160) acres.

The Agapesor Oil Placer Mining Claim, embracing

lots six (6) and eight (8) and the west half of lot seven (7), containing one hundred sixty (160) acres.

The Agareni Oil Placer Mining Claim, embracing lots one (1), two (2) and three (3) and the east one-half of lot seven (7), containing one hundred twenty-eight and $85/100$ (128.85) acres.

All in section 5, in the township 4, north range 19 west, San Bernardino base and meridian, according to the surveys made by the United States Government and all situate in the Little Sespe Petroleum Mining District, in the county of Ventura, state of California, United States of America, and containing a total of 569.54 acres.

Together with the oil wells situate thereon, and the personal property thereon, used in connection therewith, including pumps, tanks, derricks, pipe lines, casing, drilling rigs, boilers and other tools and appliances, according to the terms and conditions contained in a written contract, a copy of which contract is hereto annexed marked Exhibit "A," and made a part hereof, which said contract was duly acknowledged and thereafter recorded in the recorder's office of Ventura county on the 19th day of October, 1913, in book 139, at page 34, of the records of said office; that in and by said agreement and as the purchase price therefor the defendant Dorsey agreed to transfer and assign within thirty days of the date of said agreement, eleven thousand shares of the capital stock of the Pacific Petroleum Company, one of said defendants, of the par value of \$110,000, and \$25,000 par value of first mortgage bonds of said Pacific Petroleum Company, secured by a mortgage on said property

and other property in said state, and to pay in cash \$15,000 on or before November 1, 1913, and said Dorsey also assumed and agreed to pay an indebtedness represented by notes secured by a trust deed then existing against said property, made to and held by the Citizens Trust & Savings Bank as trustee, which notes had been executed to Benson Investment Company, a corporation, on February 19, 1913, and by it assigned to certain individuals residing in England; that the total amount of the issue of said notes secured by said trust deed made to said Citizens Trust & Savings Bank was the sum of \$50,000, but at the time when the said agreement was entered into the total amount unpaid thereon was the sum of \$25,000 and interest at the rate of six per cent for about three months, and that the assumption of said lien and the payment thereof according to the terms of said notes and trust deed was a part of the consideration of the purchase of said property on the part of said Dorsey.

III.

That thereafter the said Stephen W. Dorsey assigned his said contract of purchase to the defendant The Pacific Petroleum Company by a written assignment bearing date of June 24, 1913, a copy of which assignment is hereto annexed marked Exhibit "B"; that said assignment was duly acknowledged and on the 19th day of October, 1913, duly recorded in the recorder's office of said Ventura county; that said defendant Pacific Petroleum Company accepted said assignment and entered into possession of said property; that in and by said assignment the said defendant

Pacific Petroleum Company agreed to perform all the covenants on the part of said Dorsey contained in said contract to be performed and assumed and agreed to pay all the payments provided therein and to pay and satisfy the indebtedness secured by the trust deed to the Citizens Trust and Savings Bank mentioned in paragraph II thereof.

IV.

That thereafter, as plaintiff is informed and believes, and upon such information and belief alleges, the defendant Penn Development Company entered into an agreement with the defendant Pacific Petroleum Company by which it obtained some interest in and to the said property or some portion thereof, but such interest, if any it has, was taken subject to and with full knowledge of all the right, title and interest of the plaintiff, and the other defendants, W. H. Cochran, John Doe, Richard Roe, Jane Doe and Mary Roe, likewise have obtained some interest in and to said premises or some portion thereof, and their interests are likewise subject to the right, title and interest of the plaintiff herein.

V.

That the defendants have not, nor have either of them, paid to the plaintiff the sum of fifteen thousand dollars (\$15,000), due on or before November 1, 1913, according to the terms of said contract, nor have they transferred or caused to be transferred the \$25,000 par value of first mortgage bonds of said defendant Pacific Petroleum Company, according to the terms of said contract, and that by reason of said failure the said defendants, and each of them, have forfeited

all right to said premises, and to each and every part thereof, and to all moneys heretofore paid on account of said contract.

Wherefore plaintiff prays judgment:

1. That the amount due to plaintiff on account of the contract mentioned in the complaint be ascertained by the court, and that the defendants be adjudged to pay the same within a short day to be fixed by the court, or be forever foreclosed from any right, title or interest in and to said premises, or any part thereof.

2. That the defendants, and each of them, set forth their claims or interests in said premises, or any part thereof, if any they have, and that such claims and interests be adjudged to be subject to the right, title, and interest of the plaintiff, and that said plaintiff's title be quited against the defendants, unless the said defendants make payments for the amounts due within the time to be fixed by the court.

3. For such other equitable relief as may be necessary in the premises.

TANNER, ODELL, ODELL & TAFT,

By S. W. ODELL,

Attorneys for Plaintiff.

EXHIBIT "A."

(Printed at pages 11 to 15.)

EXHIBIT "B."

(Printed at pages 15 to 17.)

State of California, County of Los Angeles—ss.

S. W. Odell, being duly sworn, deposes and says:

That he is president of the plaintiff corporation in the foregoing and above entitled action; that he has heard read the foregoing complaint and knows the contents thereof, and that the same is true of his own knowledge, except as to the matters and things therein stated on his information and belief, and that as to those matters and things he believes it to be true.

S. W. ODELL.

Subscribed and sworn to before me this 16th day of Feby., 1915.

(Seal)

R. R. TANNER,

Notary Public in and for Said County, State of California.

[Endorsed]: Original. No. B 7 Eq. In the District Court of the United States, Southern District of California, Southern Division. Ventura Cal. Oil Co., a corporation, plaintiff, vs. Pacific Petroleum Co., a corporation, *et al.*, defendants. Second Amended Complaint to Quiet Title and Foreclose Contract. Received copy of the within 2nd am. complt., this 16 day of February, 1915. Porter & Sutton, attorney for defendants. Denis & Loewenthal, Atty. for S. W. Dorsey. Feb. 16, '15. Theodore Martin, solicitor for Penn Devpt. and Cochran. Feb. 16, 1915. Filed Feb. 16, 1915. Wm. M. Van Dyke, clerk; by Chas. N. Williams, deputy clerk. Tanner, Odell, Odell & Taft, 910-21 California Building, Main 1922, Home F1922, Los Angeles; 202-4 Dudley Block, Main 31, Home 1132, Santa Monica; Boston Block, Main 1196, Home 1057, Pasadena, attorneys for plaintiff.

*In the District Court of the United States, Southern
District of California, Southern Division.*

VENTURA CALIFORNIA OIL COMPANY, a Corporation,

Plaintiff,

vs.

PACIFIC PETROLEUM COMPANY, a Corporation,
STEPHEN W. DORSEY, PENN DEVELOP-
MENT COMPANY, JOHN DOE, RICHARD
DOE, JANE DOE and MARY ROE and W. H.
COCHRAN,

Defendants.

**Answer of Penn Development Company to Second
Amended Complaint.**

ANSWER.

To the Honorable, the Judges of the United States
District Court for the Southern District of Cali-
fornia:

The defendant Penn Development Company now, and
at all times hereafter, saving and reserving to itself
any and all manner of benefit, or advantage of excep-
tion, or otherwise that can, or may be had, or taken
to the many errors, uncertainties and imperfections
in the second amended bill of complaint herein con-
tained, for answer thereunto, or to so much thereof
as this defendant is advised it is material, or necessary
for it to make answer unto, answering says:

First: This defendant admits that the plaintiff is a
corporation organized under the laws of the state of
California; and that the Pacific Petroleum Company

and the Penn Development Company are corporations organized under the laws of the state of Delaware.

Second: This defendant denies that the plaintiff is the owner of or in possession of the certain real estate particularly described in the paragraph marked "II" of the said second amended bill of complaint, or of the oil wells situated on the said property, or of the personal property thereon and used in connection therewith, as is in the said paragraph marked "II" of said second amended bill of complaint particularly alleged and set forth, or any part thereof. And this defendant alleges, that, on the contrary, it is the owner of and in possession of the said real estate and all the oil wells and personal property thereon.

Third: This defendant denies the allegations of the paragraph marked "III" of the second amended bill of complaint herein. And it alleges that, on the contrary, it is the owner of and in possession of the said real estate and all the oil wells and personal property thereon.

Fourth: This defendant admits the allegations of the paragraph marked "I" of the alleged second cause of action in the said second amended bill of complaint herein, to-wit, that the plaintiff is a corporation organized under the laws of the state of California and that the Pacific Petroleum Company and the Penn Development Company are corporations organized under the laws of the state of Delaware.

Fifth: In answer to the paragraphs marked "II" and "III" of the said alleged second cause of action of the said second amended bill of complaint herein this defendant, while not admitting the certain agreement

and the assignment thereof particularly referred to in the said paragraphs, leaves the plaintiff to its offer and proof thereof on the trial of this action; and also alleges that such agreement and assignment thereof, even if made, are immaterial and irrelevant to the issues raised by and involved in this action, and that the same have no force, nor effect, nor any bearing whatsoever, either in law, or in equity, nor have they, or either of them, any lien or cloud upon this defendant's hereinbefore mentioned property and estate and its title thereto.

Sixth: This defendant denies the allegations of the paragraph marked "IV" of the said alleged second cause of action of the said second amended bill of complaint herein. And this defendant alleges that, on the contrary, it is now, and at the time of the commencement of this action was, and ever since the eleventh day of March, 1914, has been, the owner in fee simple of all the aforementioned real estate and the personal property thereon.

Seventh: This defendant admits so much of the allegations of the paragraph marked "V" of the alleged second cause of action of the said second amended bill of complaint herein, as alleges that this defendant has not paid to the plaintiff the sum of fifteen thousand dollars, nor transferred, or caused to be transferred the particular mortgage bonds described in the said paragraph "V." And it denies that at any time it was legally, or equitably bound, or required to make such payment, or such transfer of bonds, and that by reason of said failure it has

forfeited all, or any, right to the aforesaid premises, or any part thereof.

Eighth: And further answering the said second amended bill of complaint herein, and for a defense thereto, this defendant alleges as follows, to-wit:

That, on March eleventh, 1914, it purchased and acquired for a good and valuable consideration, all the certain real and personal property particularly described and referred to in the said second amended bill of complaint herein; and that ever since then it has been, and still is, the owner thereof in fee simple, and been in continuous possession thereof.

And it further alleges that neither the plaintiff, nor either of the other defendants herein, have any right or title to the said property, or any part thereof, nor any interest in or claim whatsoever against the same.

Wherefore, this defendant Penn Development Company demands that the said second amended bill of complaint herein be dismissed, together with the costs of this defendant herein most wrongfully sustained.

PENN DEVELOPMENT COMPANY,

By GEORGE KOPPENHOEFER, JR.,

President.

W. H. COCHRAN,

THEODORE MARTIN,

Solicitors for Defendant Penn Development Co.

[Endorsed]: Original. No. B-7 Eq. In the United States District Court, Southern Division, Southern District of California. Ventura-California Oil Company vs. Pacific Petroleum Company, *et al.* Answer of Penn Development Company to Second Amended Complaint. Received copy of the within answer this 25th

day of March, 1915. Tanner, Odell, Odell & Taft. M. K. Young, solicitor for plff. Filed Mar. 25, 1915. Wm. M. Van Dyke, clerk; R. S. Zimmerman, deputy. Theodore Martin, W. H. Cochran, suite 918 Security Building, Los Angeles, Cal., solicitors for certain dfts.

*In the District Court of the United States, Southern
District of California, Southern Division.*

VENTURA CALIFORNIA OIL COMPANY, a Corporation,

Plaintiff,

vs.

PACIFIC PETROLEUM COMPANY, a Corporation; STEPHEN W. DORSEY, PENN DEVELOPMENT COMPANY, JOHN DOE, RICHARD ROE, JANE DOE, and MARY ROE and W. H. COCHRAN,

Defendants.

Separate Answer of Defendant, Pacific Petroleum Company, to Plaintiff's Second Amended Complaint.

Now comes the defendant Pacific Petroleum Company and separately answers plaintiff's second amended complaint as follows:

I.

Answering the first count of said complaint, said defendant denies that plaintiff is, or at any time since the 11th day of March, 1914, has been, the owner of the real property described in said complaint, or of any part of said real property, or of any interest

therein; but this defendant alleges that defendant Penn Development Company is now, and ever since the 11th day of March, 1914, has been, the owner in fee of all said real property; that on or about the 8th day of November, 1914, the Superior Court of the county of Los Angeles, state of California, in an action then pending in said court, entitled "Pacific Petroleum Company, plaintiff, vs. Penn Development Company, defendant," duly made and rendered its judgment therein in favor of said Pacific Petroleum Company, one of the defendants therein, and against said Penn Development Company, one of the defendants herein, for \$350,000.00 and \$9.75 costs; that a duly certified transcript of said judgment was, on the 1st day of December, 1914, duly recorded in the recorder's office of Ventura county, California, within which all said real property is situated; that said judgment has not been set aside or modified or paid in whole or in part, but is in full force and effect and ever since the 1st day of December, 1914, has been, a lien on all said real property, superior to all rights, if any, of plaintiff therein, and that this defendant Pacific Petroleum Company is still the owner of said judgment and of said lien thereunder.

II.

Answering the second count of said complaint, this defendant denies that the defendant Penn Development Company ever entered into any agreement with this defendant by which said Penn Development Company obtained any interest in the real property described in said complaint, or in any part of said real property, and denies that any interest ever acquired

by said Penn Development Company was taken subject to any right, title or interest of plaintiff therein, and denies that the \$15,000.00 referred to in paragraph V of said count has not been paid; admits that \$25,000.00 par value bonds have not been delivered to plaintiff, but alleges that this defendant duly authorized the issuance of bonds, including said bonds for plaintiff; that temporary receipts for such bonds were executed by this defendant and delivered to and accepted by plaintiff; that this defendant has been hindered and delayed in the actual issuance and delivery of its bonds by the refusal of the trustee agreed upon to act, by litigation and by other unforeseen events, but that this defendant intends in good faith to execute and deliver its said bonds to plaintiff as agreed, and that plaintiff has not been prejudiced or damaged by such delay in the issuance and delivery of said bonds; and this defendant denies that by reason of its failure to deliver said bonds or by reason of any failure on the part of this, or any other defendant, this defendant, or any of said defendants, have forfeited all or any right to said premises or to all or any moneys paid under said contract.

III.

As a separate and further defense to the second count of said complaint, this defendant alleges that defendant Penn Development Company is now, and ever since the 11th day of March, 1914, has been, the owner in fee of all said real property; that on or about the 8th day of November, 1914, the Superior Court of the county of Los Angeles, state of California, in an action then pending in said court, entitled

"Pacific Petroleum Company, plaintiff, vs. Penn Development Company, defendant," duly made and rendered its judgment therein in favor of said Pacific Petroleum Company, one of the defendants herein, and against said Penn Development Company, one of the defendants herein, for \$350,000.00 and \$9.75 costs; that a duly certified transcript of said judgment was, on the 1st day of December, 1914, duly recorded in the recorder's office of Ventura county, California, within which all said real property is situated; that said judgment has not been set aside or modified or paid in whole or in part, but is in full force and effect and ever since the 1st day of December, 1914, has been, a lien on all said real property, superior to all rights, if any, of plaintiff therein, and that this defendant Pacific Petroleum Company is still the owner of said judgment and of said lien thereunder.

Wherefore, this defendant prays that plaintiff take nothing by this action and that this defendant recover from said plaintiff its costs and disbursements in this action.

PORTER & SUTTON,

Attorneys for Defendant Pacific Petroleum Company.
State of California, County of Los Angeles—ss.

Stephen W. Dorsey, being first duly sworn, deposes and says:

That he is an officer, to-wit, president, of the Pacific Petroleum Company, one of the defendant corporations in the above entitled action, and makes this verification for and on behalf of said corporation; that he has read the foregoing separate answer of defendant Pacific Petroleum Company to plaintiff's

second amended complaint, and knows the contents thereof, and that the same is true of his own knowledge, except as to the matters therein stated on information or belief, and as to those matters that he believes it to be true.

STEPHEN W. DORSEY.

Subscribed and sworn to before me this 25 day of March, 1915.

(Seal)

CHARLES T. SUTTON,

Notary Public in and for the County of Los Angeles,
State of California.

[Endorsed]: B-7 Eq. In the District Court of the United States, Southern District of California, Southern Division. Ventura-California Oil Company, a corporation, plaintiff, vs. Pacific Petroleum Company, *et al.*, defendants. Separate Answer of Defendant Pacific Petroleum Company to Plaintiff's Second Amended Complaint. Received copy of the within Sep. Ans., etc., this 31st day of March, 1915. Tanner, Odell, Odell & Taft, attorneys for plaintiff. Filed Mar. 31, 1915. Wm. M. Van Dyke, clerk; R. S. Zimmerman, deputy. Porter & Sutton, 901 Central Bldg., Los Angeles, attorneys for Pac. Petroleum Co.

*In the District Court of the United States, Southern
District of California, Southern Division.*

No. B 7 Eq.

C. E. STONER, F. E. SCHAAD, D. L. PETERS,
E. B. RHODES and S. W. ODELL, Late Direct-
ors and Now Trustees of Ventura-California Oil
Company, a Corporation,

Plaintiffs,

vs.

PACIFIC PETROLEUM COMPANY, a Corpora-
tion, PENN DEVELOPMENT COMPANY, a
Corporation, W. H. COCHRAN, *et al.*,

Defendants.

Decree.

This cause came on to be heard in the above District Court on the 9th day of June, 1916, before the Hon. Oscar A. Trippet, judge of said court, and the plaintiffs appeared with Tanner, Odell & Taft and Peyton Moore, their attorneys, and the defendant Pacific Petroleum Company by Porter & Sutton, its attorney, and the defendant Penn Development Company and W. H. Cochran by Theodore Martin and W. H. Cochran, their attorneys, and it appearing to the court that the original complaint in this action was filed in the Superior Court of the state of California, in and for the county of Ventura, in an action entitled Ventura-California Oil Company, a corporation, plaintiff, vs. Pacific Petroleum Company, a corporation, Stephen W. Dorsey, Penn Development Company, a corporation, and W. H. Cochran, *et al.*, defendants, said action being numbered in said Superior Court 5190, on the

29th day of April, 1914, and that on the same date a notice of action or *lis pendens* was filed in the recorder's office of said Ventura county, and duly recorded in book 4 of notices of action, at page 126, and that thereafter, by order of said Superior Court of said county and state, the said cause was ordered removed to this District Court by order made June 3, 1914, and that a transcript of the proceedings was duly filed in this court on June 11, 1914, and that thereafter all parties appeared as aforesaid in this court, and such proceedings were had that the defendants Pacific Petroleum Company, a corporation, and Penn Development Company, a corporation, and W. H. Cochran, filed their answers herein, and that said defendant Stephen W. Dorsey was thereafter dismissed as a party defendant, and that fictitious defendants John Doe, Richard Roe, Jane Doe and Mary Roe were likewise dismissed, and that the said defendants Pacific Petroleum Company and Penn Development Company are corporations organized under the laws of the state of Delaware; and it further appearing to the court that since the beginning of this action the plaintiff in said action, the Ventura-California Oil Company, a corporation, by reason of a failure to pay the state license tax, under the laws of the state of California, had become a defunct corporation, and C. E. Stoner, F. E. Schaad, D. L. Peters, E. B. Rhodes and S. W. Odell were directors of said corporation at the time when said corporation became defunct, and by virtue of the laws of the state of California became, and now are, trustees of the said Ventura-California Oil Company, and vested with the property rights of said

corporation and entitled to prosecute this action, and by order of court the said trustees having been substituted as parties plaintiff herein instead of the said Ventura-California Oil Company, a corporation, the cause proceeded to trial, and evidence, oral and documentary, was introduced and the arguments of counsel were heard and the cause submitted for decision.

The court, being fully advised, orders, adjudges and decrees as follows:

1. That C. E. Stoner, F. E. Schaad, D. L. Peters, E. B. Rhodes and S. W. Odell, parties plaintiff, are the late directors and now trustees of the Ventura-California Oil Company, a corporation, under the laws of the state of California, and all the right, title and interest of the said Ventura-California Oil Company in its property and contracts, including the property and contracts hereinbefore mentioned, have become vested in the said persons as trustees.

2. That on the 22d day of July, 1913, Ventura-California Oil Company, a corporation, aforesaid, and Stephen W. Dorsey entered into a contract by which the plaintiff agreed to sell and the said Dorsey agreed to buy the property hereinafter mentioned for the considerations expressed in said contract, which contract was hereafter, on the 19th day of October, 1913, recorded in the recorder's office of the county of Ventura, state of California, in book 139, at page 34 of deeds, and a copy of which is annexed to the complaint herein marked Exhibit "A," reference to which is hereby made for further particulars; that the said Dorsey assigned his said contract in writing to the Pacific Petroleum Company, one of the defendants,

and by said assignment Pacific Petroleum Company assumed and agreed to pay the moneys to be paid as provided by said contract, and to perform all the covenants therein mentioned, and that said assignment was thereafter duly recorded in the records of Ventura county aforesaid on August 19, 1913, in book 139, of deeds, at pages 34, *et seq.*, of said records; that there became due on November 1, 1913, from the Pacific Petroleum Company by virtue of said contract, to the said Ventura-California Oil Company, the sum of fifteen thousand dollars (\$15,000) in cash, and there likewise became due to the said Ventura-California Oil Company first mortgage bonds on the 22d day of August, 1913, having a value of twenty-five thousand dollars (\$25,000); that said bonds were not delivered and have not and cannot be delivered and there is now due, owing and unpaid the said sums with interest thereon at the legal rate of seven per cent per annum; as provided by the laws of the state of California, from the dates when the same became due, from the Pacific Petroleum Company, a corporation, to the plaintiffs as trustees of the Ventura-California Oil Company, a corporation, a total sum of forty-seven thousand nine hundred fifty-one dollars (\$47,951.00); that the said amount is a part of the purchase price of said premises, and that plaintiffs as trustees of Ventura-California Oil Company, a corporation, have a first lien upon the said premises hereinafter mentioned by reason of their said contract for the payment of said amount, and that all the right, title and interest of the defendants Pacific Petroleum Company, Penn Development Company and W. H.

Cochran and all persons or corporations claiming by, through and under them, are inferior to and subject to the said lien.

3. That an agreement entered into between the defendants Pacific Petroleum Company on one part and Penn Development Company on the other part, dated February 17, 1914, wherein Penn Development Company agreed to advance moneys to purchase the property hereinafter mentioned at a trustee's sale made or to be made by the Citizens Trust & Savings Bank as trustees, under and by virtue of a deed of trust given by Ventura-California Oil Company dated February 19, 1913, and recorded February 27, 1913, in book 137 of deeds, at page 24, records of Ventura county, state of California, and the deed made in pursuance of said sale to William H. Cochran by said Citizens Trust & Savings Bank, trustee, dated March 11, 1914, and recorded March 31, 1914, in book 142 of deeds, at page 234, in the records of said Ventura county, and the deed made by William H. Cochran, trustee, to said Penn Development Company dated March 23, 1914, and recorded in book 145 of deeds, at page 29, records of said Ventura county, constituted and were and are, insofar as the interests of the Ventura-California Oil Company are concerned in the premises hereinafter mentioned, a mortgage, and as such are subject to and inferior to the title and rights of the plaintiffs herein.

4. That the defendants Pacific Petroleum Company or Penn Development Company, within ninety days from this date, pay to the plaintiffs C. E. Stoner, F. E. Schaad, D. L. Peters, E. B. Rhodes and S. W. Odell, as trustees of the Ventura-California Oil Company, a

corporation, \$47,951.00, with interest to be computed thereon from this day until paid, at the rate of seven per cent per annum, also the costs of this suit, taxed at \$27.30 by the clerk of this court; that in default of said payment being made as aforesaid by said defendants, or either of them, then and in that case that all and singular the said premises mentioned in the complaint in this cause, to-wit:

That property situate in the county of Ventura, state of California, particularly described as follows:

The Agasthenes Oil Placer Mining Claim, embracing lots four (4), five (5), ten (10) and eleven (11), containing one hundred twenty and $69/100$ (120.69) acres.

The Agapetus Oil Placer Mining Claim, embracing lot nine (9) and the north one-half ($1/2$) of the south-east quarter and the northeast quarter of the southwest quarter, containing one hundred and sixty acres (160).

The Agapenor Oil Placer Mining Claim, embracing lots six (6) and eight (8) and the west one-half of lot seven (7), containing one hundred and sixty (160) acres.

The Agareni Oil Placer Mining Claim, embracing lots one (1), two (2) and three (3), and the east one-half of lot seven (7), containing one hundred and twenty-eight and $85/100$ (128.85) acres.

All in section 5, township 4, north range 19 west, San Bernardino base and meridian, according to the surveys made by the United States Government, and all situate in the Little Sespe Petroleum Mining District, in the county of Ventura, state of California,

United States of America, and containing a total of 569.54 acres; together with the oil wells situate thereon, and the personal property thereon, used in connection therewith, including pumps, tanks, oil in tanks, derricks, pipe lines, casing, drilling rigs, boilers and other tools and appliances;

or so much thereof as may be sufficient to realize the amount due to the plaintiffs, principal and interest, over and above the costs of suit, and which may be sold separately without material injury to the parties interested, be sold for cash in hand at public vendue to the highest and best bidder by John E. Beman, special master in chancery and commission (the said John B. Beman being hereby appointed such special master in chancery and commissioner for such purposes, said John B. Beman to qualify as such special master and commissioner by giving a bond in the sum of five thousand dollars, to be approved by this court, and taking the oath of office required of officers of this court before advertising such sale); at the main door of the court house in said county of Ventura at the hour of one o'clock p. m. on a day to be selected by him for such sale; that the said special master give public notice of the time and place of said sale by previously publishing the same for the space of four successive weeks in a public newspaper published in said Ventura county, and by posting a similar notice particularly describing the property for twenty days preceding said sale in three public places of the township where the property is situated, and in the township where the property is sold; that the plaintiffs, or any of the parties in this cause, may become the

purchaser or purchasers of said property at such sale; that the said special master on the sale of such premises being made, shall execute a certificate of purchase to the purchaser or purchasers thereof, which certificate shall specify the lands or tenements purchased and the sum paid therefor, or if purchased by the plaintiffs herein, the amount of their bid and the time the purchaser or purchasers will be entitled to a deed for such lands or tenements, unless the same shall be redeemed according to law, which time shall be the same as the redemption periods allowed by the laws of the state of California from sales under executions, and on foreclosures of mortgages; and the said master shall also file in the office of the recorder of said county of Ventura a duplicate of such certificate, signed by him; and the said special master, out of the proceeds of said sale, shall retain his fees, which fees are hereby fixed at the sum of \$100.00; and he shall pay the officers of this court their costs in this suit, and out of the remainder of the said proceeds he shall pay to the said plaintiffs the amount found due, to-wit, the sum of \$47,951.00, together with legal interest at the rate of seven per cent per annum thereon from the date of this judgment to the date of said sale; or if such remainder shall be insufficient to pay the whole of said amount and interest as aforesaid, then he shall apply said remainder to the extent to which it may reach in the satisfaction of said amount and interest, and the said special master shall take receipts from the respective parties to whom he may have made payments as aforesaid, and file the same together with his report of said sale in this court; and

in case said premises shall sell for more than sufficient to pay the principal, interest and costs in this suit, then the said special master, after making the payments as aforesaid, shall bring the surplus moneys into this court without delay to abide the further order thereof; that the said defendants, and their successors in interest, heirs, executors, administrators, grantees, or any person or corporation holding under, by or through them, be forever barred and foreclosed from all equity of redemption and claim of, in and to said premises and any part and parcel thereof, if the same are not by said defendants, or either of them or their heirs, successors, assigns, executors, administrators or grantees, redeemed according to the law within twelve months from the date of said sale; that all judgment creditors whose judgments were obtained since the commencement of this suit, if any there be, and any persons claiming under them, be forever barred and foreclosed from all equity of redemption and claim of, in and to said mortgaged premises or any part and parcel thereof, if the same are not by the said judgment creditors or their representatives redeemed according to law within the time allowed by the laws of the state of California as aforesaid; that at the expiration of the said time, if the said lands are not redeemed as aforesaid, then and in that case upon the production to the special master in chancery aforesaid of the certificate of purchase executed by him as aforesaid to the purchaser or purchasers of said mortgaged premises by said purchaser or purchasers, their representatives or assigns, said special master shall make, execute and deliver to said purchaser or purchasers or his or

their representatives or assigns, a good and sufficient conveyance in fee simple of such premises or such part thereof as shall have been sold.

That upon the execution and delivery of the conveyance as aforesaid the said purchaser or purchasers, his or their representative or assigns, be let into the possession of said mortgaged premises, and that any of the parties in this cause who may be in possession of said premises or any part thereof and any person who since the commencement of this suit and the filing of the notice of action thereof has come into possession under them, or either of them, of said premises or any of said property, on production of the special master's deed of conveyance of said premises and a certified copy of the order of this court confirming the report of said sale, surrender possession thereof to such purchaser or purchasers, their representatives or assigns, and on refusal so to do, shall be considered in contempt of this court; that the purchaser or purchasers, from the time of the sale until a redemption as aforesaid, and any redemptioner from the time of his redemption until another redemption may be had, is entitled to receive from any tenant in possession the rents of the properties sold or the value of the use and occupation thereof; that should it be necessary to prevent waste or to perform work and labor under the laws of the state of California or of the United States for the protection of the titles to said property and as required by the mining laws, the said purchaser or purchasers of said premises, or any part thereof, may apply at the foot of this decree for an order permitting such purchaser or purchasers

to do and perform such work or labor or to restrain waste, and an order shall be made permitting the said purchaser or purchasers to enter upon said premises for such purpose, to perform such work and labor, and restrain waste, and the cost and expense thereto shall be reported to this court for its approval, and thereupon such amount shall be paid by any redeptioner or redemptioners in addition to the purchase price and interest as provided under the redemption laws of the state of California aforesaid to such purchaser or purchasers upon such redemption being made.

That if the moneys arising from such sale shall be insufficient to pay the amount so due the plaintiffs, with the interest and costs and expenses of said sale aforesaid, the said special master shall specify the amount of such deficiency in his report of such sale, and that on the coming in and confirmation of said report the said defendant the Pacific Petroleum Company, which is personally liable for the payment of the debt, shall pay to the plaintiffs the amount of such deficiency with interest thereon from the date of such last mentioned report and judgment shall be docketed by the clerk of this court against said defendant for such deficiency, and the plaintiff shall have execution therefor.

That the special master in chancery shall report his proceedings in the premises to the court within ten

days after the date of any sale that he may make under this decree.

Done in open court this 1st day of Aug., 1916.

OSCAR A. TRIPPET,

Judge.

Decree entered and recorded August 1, 1916.

WM. M. VAN DYKE, Clerk.

By Leslie S. Colyer,

Deputy Clerk.

[Endorsed]: Original. No. B-7 Eq. In the District Court of the United States, Southern District of California, Southern Division. C. E. Stoner, F. E. Schaad, *et al.*, etc., plaintiffs, vs. Pacific Petroleum Company, *et al.*, defendants. Decree. Received copy of the within judgment this 22nd day of July, 1916. Porter & Sutton, attorneys for dft. Pacific Petroleum Co. Recd. copy of the within judgment this 22d day of July, 1916. Theodore Martin, J. E. W., Atty. for dft. Penn Dev. Co. and W. H. Cochran. Filed Aug. 1, 1916. Wm. M. Van Dyke, clerk; by Leslie S. Colyer, deputy clerk. Tanner, Odell, Odell & Taft, 910-21 California Building, Main 1922, Home F1922, Los Angeles; 222-4 Dudley Block, Main 31, Home 1132, Santa Monica; Boston Block, Main 1196, Home 1057, Pasadena, attorneys for plaintiff.

*In the District Court of the United States, Southern
District of California, Southern Division.*

No. B 7 Eq.

C. E. STONER, F. E. SCHAAD, D. L. PETERS,
E. B. RHODES, and S. W. ODELL, Late Directors
and Now Trustees of Ventura-California Oil
Company, a Corporation,

Plaintiffs,

vs.

PACIFIC PETROLEUM COMPANY, a Corporation,
PENN DEVELOPMENT COMPANY, a Corporation,
W. H. COCHRAN, *et al.*,

Defendants.

**Statement of the Evidence Pursuant to
Equity Rule 75.**

(Testimony of S. W. Odell.

S. W. Odell, called as a witness on behalf of the plaintiffs, testified as follows: I am one of the parties plaintiff, substituted here; I was a director of the Ventura-California Oil Company, the plaintiff at the beginning of this action, and am still a director and trustee. I was also president of the corporation at all times mentioned in the complaint and a member of the board of directors, and I have personal knowledge of all the transactions which occurred and which are set forth in the complaint in this action. I was familiar with the transaction wherein the Ventura-California Oil Company executed an agreement of sale with Stephen W. Dorsey; I drew the papers in that case; that agreement was in writing; I have the agreement and the assignment of it here.

(Testimony of S. W. Odell.)

By Mr. Moore: Q. Now, I will ask you about that assignment. As I understand they are both on one paper?

Mr. Martin: They are two separate papers. They may be attached together by a clip, but they are two separate papers.

(Witness continues): The signature to the agreement is the signature of myself as president and Mr. Peters as secretary, with the seal of the Ventura-California Oil Company attached, and also the signature of Stephen W. Dorsey. I saw him sign it, and the same were acknowledged. Stephen W. Dorsey also executed the assignment. I saw him execute it. He executed it before me as a notary public. They were recorded as one instrument. I recorded them myself.

Mr. Moore: We will offer the agreement between the Ventura-California Oil Company and Stephen W. Dorsey and ask that it be admitted in evidence.

Mr. Martin: We object to the introduction of the document as wholly irrelevant and immaterial to the issues here.

Mr. Martin: It is stipulated that in February, 1913, the title to the property in question was in the Ventura-California Oil Company.

The Court: The objection is overruled. Let these documents be filed. They are marked Exhibits "A" and "B" respectively in the complaint.

Mr. Martin: Exception.

The agreement and assignment are marked, respectively, Exhibits A and B.

(Testimony of S. W. Odell.)

The Court: Let the endorsement of recordation also be admitted in evidence. Recorded at the request of Tanner, Taft & Odell, August 19, 1913, in book 139 of deeds, page 34, records of Ventura county.

Mr. Martin: The witness was only testifying to Exhibit A, the contract, and I assume my objection only went to that particular contract. I would like now to have the objection apply to Exhibit B, which is the assignment.

Objection overruled. Exception.

(Witness continues): That paper calls for the payment of certain moneys to the Ventura-California Oil Company and the delivery of certain bonds. I know that the \$15,000.00 cash payment called for by that agreement was not paid, the \$25,000.00 par bonds called for by that agreement were not delivered to the Ventura-California Oil Company. There were printed forms of receipts given, they were called interim bonds which are not bonds, but simply receipts showing that when they are issued the bonds would be delivered; I do not know of my own knowledge whether those bonds were ever issued, but I had information which would be purely hearsay that they were not; I know that the certain trust deed referred to in that agreement, and which under that agreement the Pacific Petroleum Company should pay or cause to be paid, was not paid by any other method than the Penn Development Company advancing certain moneys; I know from the contract which I have seen between Penn Development Company and the Pacific Petroleum Company that the Penn Development Company

(Testimony of S. W. Odell.)

advanced the money; I also know it because I was present at the time of the sale and Mr. Cochran was present representing the Penn Development Company and that he turned the money over to the Citizens Trust and Savings Bank, and that Mr. Cochran afterwards stated to me that they had advanced something over \$29,000.00.

Mr. Martin: I object to that as the witness says the Penn Development Company advanced this money. Mr. Cochran bought the property and transferred it later to the Penn Development Company, representing the Penn Development Company as trustee to buy it in.

The Court: Objection overruled, but if the evidence turns out to be hearsay, it will not be regarded.

(Witness continued): I state that Mr. Cochran himself told me that he was trustee and that I have seen the form of deed which ran to him as trustee, and counsel for defendant has it in possession in court.

Thereupon counsel for defendant produced said deed from Mr. Cochran as trustee to Penn Development Company.

Mr. Moore: I offer in evidence deed from Mr. Cochran, trustee, to the Penn Development Company.

Mr. Martin: I object to the introduction as it has no bearing on the case and is immaterial.

Objection overruled. Exception.

Deed marked "Plaintiff's Exhibit C."

(Witness continues): Prior to the purchase of the property by Mr. Cochran as trustee of the Penn Development Company, I had a conversation with him in

(Testimony of S. W. Odell.)

regard to the property, and while the advertising of the sale under the deed of trust was pending.

Mr. Martin: We object on the ground that any conversation or transactions prior to the giving of this deed to Mr. Cochran, as trustee, are entirely merged in it.

The Court: I think it is preliminary. It may be relevant and may not.

Objection overruled.

Mr. Martin: Exception.

(Witness continues): Q. "Will you state what that conversation was—I mean in regard to the purchase of this property."

Mr. Martin: Same objection.

The Court: Now, the relevancy of that would depend upon who these parties were.

Mr. Moore: We offer in evidence the agreement between the Penn Development Company and the Pacific Petroleum Company, dated February 17, 1914.

Mr. Cochran: We object on the ground that it is irrelevant and immaterial.

Objection overruled. Exception.

Agreement marked "Plaintiff's Exhibit D."

Mr. Porter: May it be understood that all objections and exceptions made by one defendant, shall be deemed made by both?

The Court: Yes, sir. An order will be made to that effect.

(Witness continues.) Mr. Moore: Q. "Now, I am asking you about the conversation you had with Mr. Cochran."

(Testimony of S. W. Odell.)

The Court: The objection to this conversation will be overruled.

Mr. Cochran: Exception.

(Witness continues): Mr. Cochran called on me at my office in company with Mr. Dorsey, in this city, prior to the sale of the property, and it seems to me it was in February, 1914, possibly 30 days prior to the sale, it was in that neighborhood; Mr. Cochran called on me with Senator Dorsey, who was at that time to my knowledge president of the Pacific Petroleum Company or an officer of the Pacific Petroleum Company, and we had been urging and requesting Mr. Dorsey to pay the interest on that Citizens Trust and Savings Bank trust deed in order to save it from foreclosure; he stated that he had made an arrangement with the Penn Development Company by which that would be taken care of; that statement was made in the presence of Mr. Cochran and within four feet of him; they were sitting close together; Mr. Cochran said, yes, they were arranging it so as to take over all these properties by the Penn Development Company, and that he was there in the interests of that corporation which was being formed and had been formed, and that the Penn Development Company proposed to get hold of the property that the Pacific Petroleum Company had and that the Ventura-California Oil Company need not be alarmed, that it would see that the contract between us and Dorsey and the Pacific Petroleum Company would be carried out; at that time through Mr. Stoner and others we were negotiating to get a loan to take this matter up and relying on your

(Testimony of S. W. Odell.)

statement we ceased further prosecutions of this loan and didn't endeavor to pay up because we understood that the Penn Development Company would take care of it, being a stronger corporation.

Mr. Martin: I move to strike out all of this testimony as wholly incompetent, irrelevant and immaterial.

Motion denied. Exception.

(Witness continues): We didn't take any steps for the purpose of protecting the company's interests under this trustee's sale because we relied upon Senator Dorsey, who we thought was reliable, and upon what Mr. Cochran said at that time; at that time we didn't know the contents of this contract which has been introduced in evidence—didn't discover the contents of it until after the sale, a considerable time.

Mr. Moore: Q. "Is there anything else you desire to—

A. Nothing else as to those points. I desire to make a statement regarding the value of these bonds. The purchase price is stated in the contract and the bonds were represented to us by the Pacific Petroleum Company to be first mortgage bonds, which would be—"

Mr. Martin: We object to this testimony as outside of the issues and as irrelevant and immaterial.

Objection overruled. Exception.

(Witness continues): A. "And that they would be par value, gilt edge security, being part of the purchase price of this property; the bonds were not delivered nor were they ever presented to us nor tendered to us; the stock they did hand to us, that is,

(Testimony of S. W. Odell.)

they handed it to Mr. Peters, but I doubt very much whether it was handed to the company, but he had it in his possession."

Cross-Examination by Mr. Cochran:

(Witness continues):

I fix the date of my conversation with Mr. Cochran by the reason of the statement that he made then that an agreement had been entered into with Dorsey to the date of that agreement, and also by the fact that it was shortly before the sale. It might have been 30 days before the sale, but I am not sure. Prior to the sale I saw Mr. Cochran only once and I also saw him on the day of the sale. I don't think that the Citizens Trust and Savings Bank first advertised this property for sale about August, 1913, when the first interest became due; Mr. Martin gave us notice that his people would demand a foreclosure unless we paid it about that time, and I am not so sure when the first publication was made. It is not a fact that in the one interview which I had with Mr. Cochran that I stated I was simply a dummy president and that the real management and conduct of the affairs of the company were in the hands of D. L. Peters, one of our largest stockholders who controlled some 50 odd per cent, and that Peters managed and conducted the affairs of the company, and that I was simply a dummy president acting under instructions from him. I did state that I had not a great interest in it, and that my interest was small as compared with others; Mr. Peters was the active manager in controlling the wells and trying to sell the property, he was our secretary

(Testimony of S. W. Odell.)

and treasurer and received the money and paid it out on orders of board of directors; the \$10,000.00 referred to in the Ventura-California agreement with Dorsey was paid to the company. I don't recall that when Mr. Cochran went first to my office he was there solely for the purpose of asking me about certain abstracts of title of properties other than the Ventura-California Oil Company, but I know that he did speak of certain abstracts; I know that Mr. Cochran requested to see these abstracts which were in my possession as attorney for the Pacific Petroleum Company in certain transactions; it was in that communication that Mr. Cochran stated that he had gone into a contract with Mr. Dorsey and that is the reason he wanted to see the Pacific Petroleum abstracts. I am positive that when I first saw Mr. Cochran I had not seen a copy of the original agreement of February 17, 1914, between Pacific Petroleum Company and the Penn Development Company; I had not heard about it before that conversation with Mr. Cochran, although I had heard through Mr. Peters that negotiations were pending, but I didn't know that there was a contract; it must have been two or three months after the sale, maybe longer, when I first saw a copy of that agreement. I didn't attempt to do anything to stop the sale solely because of the representations which Mr. Cochran made to me at this particular interview. I want to say further that at the time of the sale Mr. Cochran and I were there and Senator Dorsey was there and Mr. Cochran made the same observations again to me. That he would take care of the Ventura-California Oil Company;

(Testimony of S. W. Odell.)

that his people would see that it got what was coming to it. Mr. Cochran stated it to me personally at the bank at the time of the sale. It must have been two or three or maybe more months after the sale before I saw a copy of the contract; I took an interest in the contract, but I didn't see it and I didn't go any further into its terms than to understand from Mr. Cochran and from Mr. Dorsey that the Penn Development Company would agree to take our contract and I was not interested as to what their relations were; I know Peters didn't have a copy of that agreement because he was as much surprised as I at the terms of it when he found it. Prior to the sale of this property on March 11, 1914, and subsequent to this interview which I say I had with Mr. Cochran I didn't send Peters over to see Senator Dorsey or Mr. Cochran to make any inquiries about that agreement; Peters made untrue statements if he came either to Senator Dorsey or Mr. Cochran, or both of them and represented that he came from me to make certain specific inquiries about that agreement and asked to see it to learn certain facts which he said I wanted to know, because I never sent him; I do not remember Peters phoning me at my office and advising me about certain particulars of this agreement with the Penn Company a few days, if not the day before the sale of the property on March 11th; I don't think it would be customary for anyone in my office to say that it was me on the other end of the wire if it was not.

Q. "Well, do you remember Peters at the time I spoke of calling you on the phone and saying: 'Mr.

(Testimony of S. W. Odell.)

Odell I have the original Penn agreement before me, I have examined the option which you asked me about and I find it in good form and the acknowledgment to the agreement is also in due form, so that you don't need to worry about it. A. Never told me that. It never happened."

(Witness continues): I don't know that immediately on the return of Senator Dorsey from Philadelphia, on or about February 20, 1914, he saw Peters and gave him a copy of this Penn agreement, but that Peters was very angry that the agreement had been made and threatened legal proceedings to have it set aside; I was not consulted about that. I don't know that about 48 hours before the sale actually took place Peters was threatening to try and raise money, have Dr. Stoner as one of the principals in the raising of that money in order to bid in this property at that sale so that the Penn could not bid it in; Peters did not see me about trying to raise any money for the purpose of bidding it in during those 48 hours or 36 at the most before the sale; if he stated that he stated what was untrue. From August, 1913, down to March 11, 1914, the Ventura-California Oil Company had a very small amount of money, if any, in its treasury, but it did not have enough to pay the interest on the Citizens Trust and Savings Bank mortgage. Judge Martin notified me when this interest was not paid in August, 1913, that the principal of the mortgage was called and he simply delayed the actual advertising for a few days to see if I could not arrange for the payment of the whole amount; when the sale did first come up

(Testimony of S. W. Odell.)

under the published notice, it was adjourned several times. Between the time that this interest was due and the principal was called and before the sale was actually made the directors studied several plans to raise money to pay that principal and interest; we placed applications in the hands of two or three agents there in the city; Dr. Stoner and Mr. Schaad repeatedly stated to me that they thought they had the money placed, but they did not place it. Q. "Well, then, you made a number of efforts, both the company and you, as representing Peters and other real estate agents, and Dr. Stoner, a man who was a man of some financial means, and not one of you could raise the interest, let along paying the principal; is that it? A. Dr. Stoner said he didn't. But the Pacific Petroleum Company was to pay that and it was negotiating with the Penn Development Company in the east. Mr. Dorsey was east to see about it, and they had delayed matters and that is the only reason that Mr. Martin also delayed, because he thought possibly they could get that money from the east, and Mr. Cochran came out representing those people to take that matter up. That is what you did. Mr. Cochran: I move to strike out what I did. The Court: It will be stricken out. A. Now, don't you know that you and every other director and stockholder of your company were unable to raise money to pay that interest and principal long before you ever heard that Senator Dorsey was negotiating with the directors of the Penn Development Company? A. I know that we hadn't until that time been able to raise it. I myself personally didn't take much time

(Testimony of S. W. Odell.)

to it. But I know that Mr. Stoner and Mr. Schaad and Mr. Peters were constantly working on the proposition, and Mr. Dorsey was working on it and had gone east to see if he could place it there, and he came back later and stated to us in February, or somewhere about that time, that he had made arrangements with this Penn Development Company; he didn't say agreement he said arrangement." Q. Then after Mr. Dorsey came back all you heard was that he had gone and made some arrangement. No representations were made to you further than that, that he had made some arrangements, and then you sat back and did nothing until Mr. Cochran came out, and they *you* say he made some oral representations to you, and for that reason you didn't go in and bid at the sale; is that right? A. That is just about what I said. Q. Well, didn't you know that between the time you saw Mr. Cochran and the day of the sale you could not have raised a dollar of that or the Ventura-California Oil Company either? A. I know nothing about it; I don't know that Peters threatened to raise the money and go in and bid.

(Witness continues): On the day of the sale there were present Senator Dorsey, Mr. Cochran, Mr. Martin and Mr. Peters. I do not remember Mr. Cochran saying "Peters are you going to bid at this sale"; I do not remember Mr. Cochran coming over to me and saying: "Mr. Odell, the trust officer is reading this notice of sale of this property, aren't you coming over to it?" I don't remember Mr. Cochran saying it; I didn't say to Mr. Cochran: "I am not going over."

(Testimony of S. W. Odell.)

The conversation between Mr. Cochran and myself occurred while we were all standing waiting for the sale to come on, and it was at that conversation that Mr. Cochran assured us again that the Ventura would be taken care of; either myself or Mr. Peters said to Mr. Cochran "Now as I understand it—or we understand it—you are going to take care of the Ventura Company's contract"; and Mr. Cochran said "Yes, that is the understanding, we are going to carry that out"; we were quite anxious about it because we had not seen the Penn contract and we were taking Mr. Cochran's word for it; up to the time of the sale I had not seen that contract and did not know what its contents were. Q. "And yet you knew that Senator Dorsey had not up to that time made good, but you say he said the Penn was going to take care of that principal and interest and that as a matter of fact the sale was going on because he had not done it. A. Yes, sir; I know that. I relied very much on Mr. Dorsey; all I knew up to the time of the sale was that some arrangement had been made. I have been practicing law twenty-eight years. I didn't know that Senator Dorsey was not interested in the Penn Development Company; I thought he was a stockholder; Mr. Dorsey introduced me to Mr. Cochran as a representative of the Penn Development Company and before Mr. Cochran left that room I am inclined to think that I knew he was an attorney at law because he wanted to examine the abstracts. I am quite familiar with the Statute of Frauds and I know that under the Statute of Frauds that no individual or corporation could be

(Testimony of S. W. Odell.)

made liable under an oral promise to pay the indebtedness of a third person and that such promise had to be reduced to writing in order to make it legally binding on them. Q. "And yet, then, without having seen the contract, without even knowing whether it was oral or in writing,—in fact, as you say, you took no interest in it—knowing that you could not hold the Penn Development Company under anybody's oral promise, you say that is all you did, and you relied on Senator Dorsey's oral statement and Mr. Cochran's assurance it would be paid and you let them go on and sell it; is that it? A. No, I relied on my knowledge of the law which is that if you take subject to a contract, and the transfer is made subject to that contract, you take subject to that contract, you take subject to it. Q. Then you were relying on your complaint as drawn and not on what you claim here on the stand; isn't that right? A. No; I rely upon the knowledge that when the Penn Development Company stated it was taking this property over—or substantially stated—our contract being of record—and Mr. Cochran's statement that we would be taken care of—I relied upon my knowledge of the law that you would have to take care of that contract which is of record and that you could not get title unless you did take care of it." You will observe we are not suing upon this oral contract; we are stating that you deceived us and caused us to stop our efforts in getting this money by stating that you would take care of us. Q. Then, as a matter of fact, you do not rely, to recover in this action, on any representations which were made by Mr. Dorsey or Mr.

(Testimony of S. W. Odell.)

Cochran, do you? A. As construing the contract which I found afterwards you had entered into, I do rely upon those statements; I rely upon them because it explains that they were simply mortgages and nothing more."

Q. By Mr. Cochran: Well, when you say that these oral conversations which you say you had with Mr. Dorsey and Mr. Cochran tend to explain the Penn Development Company contract of February 17, 1914, and to show that, as a matter of fact, the Penn Development Company secured nothing but a mortgage, you are not relying, are you, upon the language of the contract, but, rather, upon your own construction and conclusion as to that contract. Is that correct? Now, just yes or no. A. Well, I will answer yes, with limitations. I will have to explain what I mean. As to the formal parts of the contract between the Pacific Petroleum Company and the Penn Development Company, I knew that soon after the sale when the copy was brought to me by Mr. Peters, who had secured it from Mr. Dorsey; until that time I don't suppose I knew there was such a contract, although I was impressed from what Mr. Cochran and others said, that there was some sort of an agreement entered into; I was so impressed at the interview between Mr. Cochran, Senator Dorsey and myself prior to the sale; I can't say that I knew that there was some written instrument between the Pacific Petroleum Company and the Penn Development Company but I suspected there was; I didn't inquire as to the terms, it was none of my business what your relations were; I am just positive that it was a considerable while after the sale

(Testimony of S. W. Odell.)

when I actually saw a copy of that agreement, it was all of thirty days and it might have been two or three months, but I never saw a copy of it until after this suit was instituted, and I am quite sure of that for if I had had a copy of it I would have attached it to my complaint; I did not have any detailed particulars about this agreement, before this suit was instituted, only there was some sort of an agreement, only I didn't know what it was. Q. "I call your attention to the original complaint in this action, which is verified by yourself on April 28, 1914. The sale was on March 11. And in that you allege: 'that thereafter, and on the 17th day of February, 1914,' that is, after this agreement between Dorsey and the Ventura-California Oil Company, which had been set up in the complaint ahead of this—** you allege in paragraph 4 'that thereafter, on the 17th day of February, 1914, as plaintiff is informed and believes and upon such information and belief alleges, the defendant, the Pacific Petroleum Company, and the defendant, the Penn Development Company, entered into an agreement without the knowledge or consent of plaintiff whereby'—and then you repeat the provisions of that agreement. Now I ask you how you can reconcile your statement that when this action was instituted you did not know the terms of that agreement and had not even seen a copy of it, and yet are able in that complaint in April to swear to the date of the agreement and its terms? A. In the first place the complaint does not contain the terms of the agreement. In the second place the dates seem to be correct, but my recollection is that

(Testimony of S. W. Odell.)

I did not have a copy of that agreement until then or shortly afterwards. I am not sure about that. It might have been within thirty days and it might have been later"; when I swore to that complaint it was from what I gathered from what Mr. Cochran and Mr. Dorsey told me and from the circumstances, and perhaps from what Mr. Peters had told me to some extent; Mr. Cochran never stated to me the terms of the agreement except that he stated he had an arrangement by which the Ventura-California Oil Company would be taken care of; Senator Dorsey never did give me the details of that agreement. Q. "And where did you get the details of that agreement? A. I have told you three or four times. Q. You said from Senator Dorsey and Mr. Cochran and Mr. Peters. A. Some from all of you." I don't admit that I put together the aggregate statement of these three different people and on that swore to the complaint which I think is a statement of facts. Q. "It was not a statement of facts itself, but your conclusions from what somebody told you. Is that correct? A. Yes, my conclusions." I was informed to some extent but not fully. I think I saw a copy in 1914, that is my recollection. Of course it has been nearly two years ago, and I didn't think this question was material in the matter so I have not refreshed my recollection. My first amended complaint was verified on January 12, 1915, I had knowledge of the Penn Development Company agreement before that time. When I used the expression that the Penn Development Company "advanced" the moneys with which this property was bought in on

(Testimony of S. W. Odell.)

March 11, 1914, I used the word "advanced" advisedly under the terms of the contract; I rely on that contract to sustain my allegation that the Penn Development Company advanced that money for the Pacific Petroleum Company. To sustain my statement that the Penn Development Company agreed to advance and subsequently did advance the sum in question, I rely on these parts of that agreement; after the formal opening there are recitals under "whereases"; "Whereas, Stephen W. Dorsey is the owner of a majority of the capital stock of the Pacific Petroleum Company, and whereas, the said Pacific Petroleum Company is under contract to purchase, in fee simple, certain oil properties in the state of California, and is the holder of certain leasehold interests in other oil properties.' Now, 'under contract to purchase' refers to the Ventura-California Oil Company." Now then, there is another one: "Whereas, certain of the agreed purchase price has not been paid on certain of the properties under contract of purchase as aforesaid.' I think that refers to ours. 'Whereas, certain underlying mortgages assumed by the Pacific Petroleum Company have not been paid.' That refers to the Citizens Trust & Savings Bank. 'Whereas, the *the* Pacific Petroleum Company is indebted to various parties.' That might refer to us also." Now, here is where it is coming to show it was advanced: "Whereas, the Pacific Petroleum Company is desirous of entering into an agreement under which its property may be, to such extent as may be found possible, preserved, upon the terms and conditions set forth in this agree-

(Testimony of S. W. Odell.)

ment.' Now, you are going to help them preserve their property." And again, "'Now, therefore, this agreement witnesseth, that in consideration of the premises, and of the mutual covenants herein contained, it is hereby agreed between the parties hereto, as follows: to-wit: First: The Penn Development Company agrees to purchase at a sum not exceeding thirty thousand dollars (\$30,000) at the forthcoming trustee's sale, the title in fee simple to the Ventura-California property, described as follows.'" Now, I say that when you are agreeing—

Mr. Cochran: I object to your arguing the matter.

The Court: Make your objection to the court.

Mr. Cochran: I object to the witness stating any conclusions of his from that agreement. My question is entirely confined to what paragraphs of that agreement he relies on to sustain his claim.

The Court: The motion is denied.

Mr. Cochran: Exception.

The Court: He has a right to explain what paragraph he relies upon and why he relies upon it. He is entitled to explain why.

A. Now, to preserve their properties, you are going to advance this money, the way I take it, under this contract to purchase at that sale. Then it proceeds: "The Penn Development Company is to take title to the same in fee simple absolutely without conditions or trust relations of any kind whatsoever, except the Penn Development Company shall forthwith enter into an option in the form attached hereto as Exhibit A." Then, "Second:—

(Testimony of S. W. Odell.)

Q. Just pick out the clauses relating to this and I think it will save time.

A. Then regarding some other properties—I will not read that. “Fourth: The Pacific Petroleum Company hereby transfers, sets over and assigns to the Penn Development Company, all its right, title and interest of every kind and description in and to all the oil to be derived from the operation of all the properties owned or leased by it, or held under contract, to be held by the Penn Development Company, in trust: A—” Now, I state that it referred to our company because we had two producing wells and the oil produced there was to be taken—that is, we had a well that had been producing and one that was being at that time drilled and it was producing some oil. Now, you would get this oil—(reading) “A. To pay the expenses of operation in the production of the said oil, not including office expenses, or salaries of officers of the corporation; B. To retain the monthly sum of two thousand five hundred dollars (\$2,500) for the period of four (4) months from the date hereof, and thereafter to retain the monthly sum of five thousand dollars (\$5,000) until all the money advanced for the benefit of the Pacific Petroleum Company,—” and that is the reason I say that you advanced that money, \$30,000, to preserve its property, and you are going to get it back out of the profits. And that is a mortgage, and that is all it is. And that is the reason I said—

Mr. Cochran: I move to strike out his conclusion.

The Court: Now, you have asked him what para-

(Testimony of S. W. Odell.)

graphs he has relied upon, and he has pointed them out, and I think he has a right to explain why he relied upon them.

Mr. Cochran: Exception.

A. (Continuing): Now, further, I will read: Five thousand dollars to be retained "until all the money advanced for the benefit of the Pacific Petroleum Company shall have been paid to the Penn Development Company, or until such further period as shall be sufficient to pay to the Penn Development Company the amount to be paid under the option hereto attached as Exhibit A for the Ventura-California property." Now, Exhibit A is a very ordinary arrangement under the California law by which the property is mortgaged back and forth. Exhibit A is an option attached hereto. Yes, it is under the same cover, and always has been. Now, Exhibit A recites that, "Know all men by these presents that the Penn Development Company, a corporation organized," etc., "in consideration of one dollar," etc., "and the agreements herein, grant to the Pacific Petroleum Company, a corporation organized," etc., "an exclusive option to purchase the following described property, known as the Ventura-California property, at any time within three years for the sum of two hundred thousand dollars (\$200,000) in cash, and upon the further delivery to the Penn Development Company of twenty per cent of all the capital stock issued and outstanding issued by the Pacific Petroleum Company, or by its successor, less only as follows: A. Such stock as may be retained in the treasury," etc. "B. Such stock as may be issued and

(Testimony of S. W. Odell.)

delivered for the funding of indebtedness of the corporation: C. Such stock as may be issued and delivered for the payment in part purchase to other than the said Stephen W. Dorsey." "The following are conditions precedent to the exercise of the foregoing option: 1st. All outstanding bonds," etc.—that has nothing to do with us. "3rd. There shall be subtracted from the purchase price under this option: (a) Twice such sum as shall comprise the difference between the amount advanced by the Penn Development Company and one hundred thousand dollars (\$100,000); (b) Such sums as shall have been received by the Penn Development Company under the operation of subdivision 'b' of paragraph 'Four' of a certain agreement made and entered into between the Pacific Petroleum Company and the Penn Development Company, and dated the 17th of February, 1914." That is this very agreement. Now, when you figure out what that mean, it means that—

Mr. Cochran: I object to the witness stating what it means, and I move to strike it out.

The Court: The motion is overruled.

Mr. Cochran: Exception.

A. Now, taking all of that together, and also paragraph 5: "Should the Pacific Petroleum Company in its discretion, after the re-payment of the amount due to the Penn Development for advances cease the payment—" etc. Then there are certain other conditions. So that, taking these two contracts all together and the portions read, unquestionably the Penn Development Company was advancing the money to preserve

(Testimony of S. W. Odell.)

the properties of the Ventura-California Oil Company, and it was nothing more than a mortgage.

Q. By Mr. Cochran: That is, you mean to say, your view of the construction of it?

A. Well, I have a fine brief here which will prove it.

Q. Now as I understand you and as I understand your complaint, it is the theory of the Ventura-California Oil Company that because of this agreement with the Penn Development Company of February 17, 1914, the Penn Development Company acquired nothing more than a mortgage on the Ventura-California Oil Company's property when they bought it in 1914. Is that correct?

A. The Pacific Petroleum Company had the equitable title under this agreement of sale. It could mortgage that. It mortgaged it to the Penn Development Company in order to preserve it. It is subject, therefore, to our contract.

Q. Then the Pacific Petroleum Company had nothing to sell, did it?

A. It did. It had an equitable title under the contract.

Q. I ask you to point out in that agreement anything on which you can found the statements or the theory of your conclusion that the word "advances" is not by that contract limited to everything but the purchase of the Ventura-California oil property.

A. I have already stated specifically all about that. I will go through it again. This contract must be construed all together. The option and the agreement were given at the same time, attached together, and

(Testimony of S. W. Odell.)

they must be construed together. Every clause bears upon every other clause, therefore when it is stated in one part that in order to preserve the property you are going to make advances and then go on and state how you are going to make them, it must all be construed together as a matter of law. I think that the Ventura-California Oil Company purchase is not treated differently or separately.

Q. "I want to call your attention to the fact that the first reference to the word 'advances' by the Penn Development Company is used in paragraph 2 of that agreement, and I ask you if all agreement as to the Ventura-California Oil Company does not precede that, and I ask you, if you can find the word 'advance' or 'advances' in any way used in connection with the purchase of the Ventura-California Oil Company to find it and point it out. A. That is a very long question.

Mr. Moore: We object to it because the contract speaks for itself and it is incompetent, irrelevant and immaterial."

Objection sustained. Exception.

Mr. Cochran: The objection being sustained, I move to strike out the testimony of this witness by which and in which he attempted to construe this contract or give any of his conclusions or theories or deductions relative thereto, said objections being based merely on the ground that my question was entirely directed to asking him to point out on what paragraphs of that agreement he relied on to sustain his contention. Inasmuch as he gave his conclusions and deductions as to those paragraphs, and I am precluded from examining

(Testimony of S. W. Odell.)

him to show that his conclusions and deductions are not well founded, I move to strike out his testimony in that particular.

Motion denied. Exception.

Mr. Cochran: I offer in evidence the original deed of trust made February 19, 1913, between the Ventura-California Oil Company and the Citizens Trust & Savings Bank and The Benson Investment Company of the third part, marked "Defendants' Exhibit 1."

Mr. Cochran: At the time of this sale the Penn Development Company had not quite completed its registration in California, although the papers were here, so I, Mr. Cochran, telegraphed to the Penn Development Company and told them of the importance of it, and they instructed me to take it as trustee pending the filing of those papers, and when the filing was completed I transferred it. I offer in evidence the deed from William H. Cochran of the city of Philadelphia, trustee, to the Penn Development Company, a corporation organized and existing under the laws of the state of Delaware, covering the property in question and dated March 23, 1914, and recorded March 31, 1914, in the records of Ventura county, in book 145 of deeds, at page 29, marked "Defendants' Exhibit 2."

(Witness continues): Further

Cross-Examination by Mr. Porter:

Q. Hasn't Mr. Peters told you that Senator Dorsey paid to him \$25,000 or \$30,000?

A. I said to Mr. Peters in this way at one time, that your answer claimed that that \$15,000 was paid,

(Testimony of S. W. Odell.)

and he said it was not; that he and Mr. Dorsey had an agreement themselves and he furnished me a copy of the agreement and I have it, by which he was turning in the Midway Five and the Maricopa Union and three of their properties whereby he and Mr. Dorsey were to divide up all capital stock and bonds and cash they received for those properties from the Pacific Petroleum Company. He said to me that there had been some money turned over which belonged to the Maricopa Union and which was spent on the Maricopa Union and Midway Five, but what the sums are or the amounts I do not know.

Q. You don't know whether any payments were made since the date of this receipt?

A. I know there was not to the Ventura, because I attended all meetings and I have carefully looked over all of our books and consulted with Mr. Peters and I know positively that that \$15,000 was not paid to us.

Q. Mr. Peters I believe was secretary and treasurer of the company?

A. Well he was secretary. Mr. Schaad was treasurer.

Q. And Mr. Peters was the one to whom the \$10,000 originally was paid?

A. I will have to explain a little on that. That \$10,000 was paid in by Senator Dorsey on an original option which was taken by some English people some months before this and which fell through, and in giving him this contract we gave him credit for that \$10,000. It was paid into our treasury and went into

(Testimony of S. W. Odell.)

the bank in the name of the Ventura-California Oil Company. That is the only money we ever received from Senator Dorsey.

Q. And the stock in the Pacific Petroleum Company that you received, those stock certificates were delivered to Mr. Peters, were they not?

A. Mr. Peters had it in his possession and he handed it over to me. I think we have those stock certificates, but the interim bonds—I mean to say the bonds—we have not and never had them. Mr. Peters was a large stockholder in our company and he and Mr. Schaad together owned a majority, but I don't recollect now the exact number of shares.

Cross-examination concluded.

The Witness: I have here a copy of the receipt which Mr. Peters gave as secretary of the Ventura-California Oil Company and which is signed "The Ventura-California Oil Company" by D. L. Peters," and reads as follows: "Los Angeles, California, Oct. 31, 1913. Received from Stephen W. Dorsey, and in behalf of the Ventura California Oil Company, twenty-five thousand dollars (\$25,000), 6%, ten year interim bonds of the Pacific Petroleum Company, and eleven thousand shares (11,000) of the capital stock of said Petroleum Company, as full payment to said company except the cash payment of fifteen thousand dollars (\$15,000) and the payment of an existing trust deed against said Ventura Oil Company's property for twenty-five thousand dollars (\$25,000), both of which are to be paid by the Pacific Petroleum Company, according to the terms of the agreement relating thereto.

(Testimony of S. W. Odell.)

Ventura California Oil Company. By”

Mr. Porter: We have no objection to the introduction of that copy of the receipt in evidence.

The Witness: If you have no objection then we will introduce it.

Mr. Cochran: Well, who signed the receipt?

The Witness: The Ventura-California Oil Company, by D. L. Peters.

The receipt was filed, marked Plaintiff's Exhibit "E."

Mr. Martin: I move that the testimony of this witness be stricken out for the reason that there is absolutely nothing in this testimony that is material; that it is absolutely irrelevant and immaterial and not in any way pertinent to the issues as set forth in the pleadings in this action; and for the further reason that there is no statement made in their second amended bill of complaint showing or alleging or pleading any agreement whatever between this defendant, the Penn Development Company, and the plaintiffs, Ventura-California Oil Company; that statements which he has made as to what Mr. Cochran stated in no way binds the Penn Development Company, as nothing has been produced to show that Mr. Cochran had any authority to make the statements which this witness states he did make, and if he had authority to make those statements or any statements binding the Penn Development Company in the matters testified to they should have been in writing; and particularly with reference to any oral agreement and conversations.

The Court: My understanding concerning the effect of the motion is that it only goes to the manner

(Testimony of S. W. Odell.)

of the production of the evidence. No objection was made to this evidence on the ground that it was oral at the time it was offered.

Mr. Martin: I thought I made an objection, if the court please.

The Court: No objection raising the question of the statute of frauds was made to this evidence that I remember of.

Mr. Martin: Well, the motion is made in time.

Motion overruled. Exception.

Mr. Cochran: If Your Honor will permit me to call your attention to the fact that when this witness started to give statements of oral conversations they were objected to. Now, we were not in position to object to them on the ground that they were within the statute of frauds, because it is quite possible that while the original conversation and statement were oral, we had nothing on which we could found any motion to strike out or make any objection as to its being within the statute, because we did not know but that when this witness was through he would afterwards say it had been reduced to writing. But when the witness has concluded, and we find that this testimony as to these alleged representations and agreements was based upon nothing more than oral statements and alleged oral agreements, no reference being made to any written paper, and no claim for any written paper being made, then for the first time are we in position to move to strike out on the ground that for the first time we know that it is within the statute of frauds, and there-

(Testimony of S. W. Odell.)

fore we make that as an independent motion at this time.

The Court: Well, I do not agree with you. I think you waived the statute of frauds in permitting the witness to testify without making an objection at the time, without either pleading it or making an objection.

Mr. Cochran: As to the pleading, Your Honor, there is nothing in the complaint which would justify the testimony. * * * The original complaint embodied those alleged oral representations. That was demurred to, and the court sustained the demurrer. In this second amended complaint they do not claim any oral representations or agreement as they did in the original complaint. If they had, we would have demurred to it as within the statute of frauds. * * * When this witness completed his testimony we found it was only based upon oral conversation and then for the first time were we in position to make our objection. We were not in position to object until this testimony was completed, or to make such a motion.

The Court: Now, I think that evidence is material for the purpose of showing that the Penn Development Company had knowledge of this claim of these people and that you had knowledge of it. You are one of the defendants here. And it is material and relevant to show that you had knowledge of their claim at the time you bought this property in and that the Penn Development Company took whatever title you had. It makes that entirely relevant even if the statute of frauds did bar it. It is good for the purpose of showing knowledge, if nothing else.

(Testimony of S. W. Odell.)

Mr. Martin: We will save an exception.

Plaintiff offers in evidence a notice of action in this case recorded April 29, 1914, in notices of action, at page 126, records of Ventura county, marked "Plaintiff's Exhibit F."

Mr. Cochran: The Penn Development Company is willing to stipulate that on or about the 8th day of November, 1914, in the Superior Court of the county of Los Angeles, state of California, in an action then pending in said court entitled Pacific Petroleum Company, plaintiff, vs. Penn Development Company, defendant, that court rendered its judgment therein by default in favor of the said Pacific Petroleum Company and against the said Penn Development Company for the sum of \$350,000 or thereabouts, and that a transcript of said judgment was filed on or about December 1, 1914, in the recorder's office of Ventura county. We also stipulate that the complaint in that action involved the contract between the Penn Development Company and the Pacific Petroleum Company of February 17, 1914.

The Court: That is, it was for a breach of that contract this judgment was obtained?

Mr. Odell: Yes.

Mr. Cochran: A suit for damages which is based upon the same facts, and it was taken by default.

(Testimony of C. E. Stoner.)

C. E. Stoner, called on behalf of the plaintiffs, testified as follows:

My name is C. E. Stoner. I was connected with

(Testimony of C. E. Stoner.)

the Ventura-California Oil Company as a director during the years mentioned in this complaint; about the time of the sale of this property under the trust deed, I had knowledge of the fact that there was a sale pending; prior to that time I talked with Mr. Schaad about obtaining a loan to take up that mortgage and I think the matter was talked very fully in the directors' meeting; I did not have any talk with Mr. Cochran, but since the sale of the property I have talked with him about this matter in general several different times; at the time I speak of as to obtaining a loan, I had no promise of a loan but I felt sure I could negotiate it; I had a talk about this property, some time previous to the sale; with a man who bought some stock at my suggestion.

Cross-Examination by Mr. Cochran:

Witness Stoner continued: I had no conversation and did not meet Mr. Cochran until a long time after the sale was made by the trustee.

Q. Now within a period of say three days before this sale, did Peters come to you about raising any money and trying to bid in the property?

A. No, I went to him. I was quite concerned about it, and I said to him, "Now if you are not sure that this is going through and we will be protected, we must raise the money and take care of the mortgage. If that is the end of our interest in that valuable property I would like to know it and protect myself." He said there would be no trouble about it at all, that this is a part of the entire deal, one within the other.

Mr. Cochran: On behalf of the defendant, Penn

(Testimony of C. E. Stoner.)

Development Company, I move for a judgment and decree in favor of that company to the effect that it is the absolute owner in fee simple of the property covered by the complaint in this action and alone is entitled to the possession thereof and all rights therein.

Motion denied. Exception.

Plaintiffs rest.

DEFENDANT'S PROOFS.

(Testimony of William H. Cochran.)

William H. Cochran, called as a witness on behalf of the Penn Development Company, testified as follows:

Mr. Martin: "I think it might be well to have it understood—I think counsel on the other side will agree with me—that the defendant Cochran having filed an answer which is virtually a disclaimer, they do not claim he has any interest in this controversy at all."

Mr. Odell: We do not claim any judgment against him.

Mr. Martin: And you do not recognize that he has any interest in this matter at all, that is, as a defendant?

Mr. Odell: As a defendant, we think he has not.

(Witness testifies): I am an attorney and counsellor in the state of New York and have been such for about 25 years and in this particular matter I am one of the attorneys for the defendant Penn Development Company. I arrived in Los Angeles the very last

(Testimony of William H. Cochran.)

day of February, 1914, and my best recollection is that the following day, Saturday, was March 1, and I know I didn't devote myself to business on that day. The following Monday, which my recollection is was the 3rd of March, I took up this matter, or the general matters out here on behalf of the Penn Development Company, and in doing so went immediately to see Mr. Dorsey, who at that time was president of the Pacific Petroleum Company. I was really very ignorant of the details of the situation out here, having left the East very hurriedly, and learned all I could from memoranda on the way west, but on my arrival here, and on looking up various matters, I found that neither Mr. Dorsey nor anyone in the Pacific Petroleum Company had such papers and documents and records and abstracts of title as I would like to see, and therefore I told them I thought I should be put in touch with somebody who could show me some papers on which I could really act. The Senator then told me that he thought Mr. Odell would be the best man, and as I particularly wanted to see an abstract of title of one particular piece of property—I should think it was the Midway Five,—he took me over to Mr. Odell's office and introduced me, and I said I was very anxious to see what abstract of title he had relative to this property—which, however, was not the Ventura property at all—and he went through his desk and went through some books and abstracts and told me what he had. My recollection is that it did not help me any, what he had, and therefore we let it go. At that time Mr. Odell, I think, referred to the fact that—as I

(Testimony of William H. Cochran.)

supposed—I cannot give his words, and I would not attempt to, and I do not want to be considered as trying to do so, because it is two years or more ago, but I will very frankly state that Mr. Odell stated something to the effect that the Ventura-California Oil Company, of course, had this money which they stood to lose, and they didn't know what they were going to do, or anything else. I am referring to the indebtedness secured by this trust deed that was advertised the sale to take place within a few days subsequent to that conversation. And then I told Mr. Odell generally what our plans were, but in no way—and my memory is positive about it—did I refer to the Ventura-California agreement. Any reference to that was made by himself, and himself alone, and any remarks which I made about the general plans were confined to that and I did not refer to the Ventura-California contract or agreement in any shape, form or manner. I simply referred to the general plans of the Penn Development Company in trying to work out the complicated situation it was in. That any statement I made to Mr. Odell was as to the general plans of the Penn Development Company, which did not include the Ventura-California Oil Company under their agreement with the Pacific Petroleum Company; and I do repeat this, and I repeat it most positively—that I never referred to the Ventura-California Oil Company; that the only reference to it was made by himself when he spoke about this indebtedness, and I made no reference to it whatsoever. Next time I saw him was at the sale. My memory is perfectly clear about it. I want to say

(Testimony of William H. Cochran.)

this, sir,—I can hardly give that conversation so that the court will understand it without relating conversations which occurred with Mr. Peters between the time I met Mr. Odell the first week in March and the sale on the 11th. Mr. Peters was represented to me as being the representative of the Ventura-California Oil Company, and I had learned first, and then directly from himself, not only that he had a copy of this agreement of February 17, 1914,—because I saw it in his possession—but he was very much angered over it and used some pretty stiff language in talking about Dorsey for having signed it on behalf of the Pacific Petroleum Company. Dorsey was trying to quiet him and I kept out of it because I felt that it was none of my concern. If they were fighting amongst themselves, let them go on. But I saw Peters two or three times between the time of my arrival and the sale. Peters had a copy of this agreement in his possession, discussed it, and, as I say, was blaming Dorsey, even telling me that he was going to have the agreement, if possible, set aside, because he thought this option was for too long a period. The best of my recollection is that it was the day before the sale—I think it was about two days before the sale when I saw Peters and Dorsey, and Peters said that—“Well,” he says, “we are not going to have that sale go on.” He says, “I am going around to get Dr. Stoner and some of the others and we are going to raise the money and buy that property in ourselves.” I says, “Well, Peters, I don’t care whether you do or not.” I says, “My instructions are limited to a bid of \$30,000 under our agreement, and if you get anybody

(Testimony of William H. Cochran.)

to bid it in for more than that, you can have it. We will never bid a dollar beyond it." I hears the same story from him, both directly and indirectly, the next day, that he was still trying to raise this money and was going to bid against me at the sale. The day before the sale I was sitting in Senator Dorsey's office in the Hellman Building when Peters came in, and he said, "I have just left Mr. Odell's office. Mr. Odell is very anxious to know whether that agreement of the Penn Development Company of February 17, 1914, is in proper form as to execution, and particularly as to the option. I said, "Peters, here is the agreement, the original;" he then took a look at it and read over the execution and then also read over the option and then went to Senator Dorsey's desk, picked up the telephone, and called Mr. Odell's office.

Q. By the Court: What do you mean by the option?

A. Attached to this agreement of the Penn Development Company there is an option by which the Pacific Development Company, if they want to, within the period of three years, can buy back this property. That is what was referred to in that conversation. There is a formal option attached to this and signed by the Penn Development Company and the Pacific Petroleum Company, giving an exclusive option for three years to buy back. And so Mr. Odell must know about that option. "Well," he says,—and he went to Senator Dorsey's desk, about 5 or 6 feet away, and let the Senator get out of his seat and picket up the telephone and called up Mr. Odell's office. He asked if

(Testimony of William H. Cochran.)

that was Mr. Odell, and—of course I can't say what was said, but he says, "All right." Peters then went on to say, "I have in my hand the original agreement between the Penn and the Pacific, and," he said, "I have looked the execution over, and it is all right, and I have also looked the option over, and that is all right, and we do not need to worry anything about it." Words to that effect. I don't know that he used the exact expression "we don't need to worry." And he hung up. And Mr. Odell says, "That is all right." Now, next morning when the sale came up I was still uncertain, to be frank, whether they were going to bid against us or not. At that time I had no information, and when I went over and saw Peters and Dorsey sitting there—I even mentioned to I think Judge Martin as I went it, "I am afraid they are going to bid against us." And I went over then when they were sitting there, and I said to Peters, "Are you not going to bid?" He says, "No." Then when the trust officer commenced to read the advertisement of the sale, which was maybe 10 or 15 feet away from where these gentlemen were sitting, I went over there and said to Mr. Odell, I says, "Mr. Odell, they are reading this notice." He says, "I have no interest in it," or words to that effect, and passed it over. I don't think Mr. Odell and I passed a single word, unless it was the pleasantries of the day, except when I went over and called his attention to the fact that the trust officer was reading the notice of sale. I had gone to Peters already and asked him if he was going to bid, and I went to Mr. Odell and said, "They are reading the

(Testimony of William H. Cochran.)

notice of sale," and he said, "I have no interest in it," or some such expression. Now, you asked me as to any other conversation about this contract.

Q. I want to finish this in the bank first. When Mr. Odell was on the stand this morning he testified like this: "Either myself or Mr. Peters said to him"—meaning yourself, Mr. Cochran,—"'Now, as I understand it," or "we understand it,"—"you are going to take care of the Ventura-California Oil Company's contract.' And Mr. Cochran said, 'Yes, that is the understanding. We are going to carry that out.' Now, that is as near the words as I can recall it. Right in the building here." I will ask you, did any such conversation take place between you and Mr. Odell at that time, as you recall?

A. I don't understand that Mr. Odell says it did. When he says he thinks it did—whether between Mr. Odell and myself or Mr. Peters and myself—Mr. Odell don't say that he did, and I can positively swear that he never did. Mr. Peters never referred to that contract or agreement, and we had no conversations over there. These gentlemen were all sitting there exchanging pleasantries when I went and asked Peters if he was going to bid, and I went to Mr. Odell and asked him if he was not going to come over and follow up the sale.

Q. Did you at that time in the bank or at any other time say to Mr. Odell or to Mr. Peters that the Penn Development Company would take care of the California-Ventura Company contract?

A. I never said that in the bank or in any other

(Testimony of William H. Cochran.)

place, nor at any other time, nor to any other person, and I had no authority to do so in the slightest particular. My authority was limited to this contract.

Q. Did you come here with power of attorney, or as the attorney in fact of the Penn Development Company?

A. No, sir, I came out here simply as attorney at law to examine different titles and see that this sale was properly conducted, and any other matters that we took over, that the titles were properly searched.

Q. By Mr. Martin: Mr. Cochran, will you kindly explain to the court how it was that the property was deeded and sold to you at the trustee's sale instead of to the Penn Development Company?

A. As I say, I came out here very suddenly, and the Penn Development Company had only just been organized, and when I got out here, and just about the time the sale was going on, I was unable to complete the registration of the Penn Development Company, it being a foreign corporation, in time for the bid, and therefore, seeing that was going to happen, and knowing I didn't have authority, I telegraphed to my clients and told them the situation, and they telegraphed me back specific instructions. "Take title yourself as trustee." So I did bid in that way, took the title in that way, and just as quickly as I could complete the registration I deeded the property over to them, where it has ever since been.

Q. The reason being, as I understand it, that on the 11th day of March, 1914, the day of this sale, the articles of incorporation of the Penn Development

(Testimony of William H. Cochran.)

Company had not been placed on file with the secretary of state of California?

A. No, sir; they were not.

Q. It being, as the pleadings show, a Delawared corporation?

A. That is right, sir. You asked me what interviews I had relative to this agreement. I had, I think, one other that comes to my mind, and that was in the month of April, and it was with D. L. Peters, and I am able to place the date of that because of a letter which I wrote east at the time. The interview took place with Mr. Peters the day after the original complaint was served in this action on the Penn Development Company's designated agent here in California. Peters came into my office—I had an office at that time here—and I was kind of hot over this suit, and expressed my opinion quite vigorously, I guess, and he says, "Now, look here, Colonel, don't you worry about that suit, I am going to tell you the true reason why that suit is brought." He says, "As a matter of fact, it is this—that the Ventura-California Oil Company have a note for about \$30,000 over here at one of the banks on which Mr. Odell, Dr. Stoner,—and I have forgotten whether he mentioned anybody else or not—are endorsers, and the bank knows that the only assets the Ventura-California Oil Company has is this particular piece of property. Now, they are going to jump us, and are jumping every one of us, to make good on that \$30,000 note. But don't worry about it, we have brought this suit simply to show them, or to make a bluff at showing them, that we can do something to

(Testimony of William H. Cochran.)

get that out of the way. That conversation had such an impression on me that I wrote next day to my clients in the East enclosing a copy of the complaint and repeating that conversation verbatim. That is the reason I am able to fix the date so well. That is the only conversation I have ever had about the Ventura contract or about these stocks and bonds, unless possibly in the most general way.

Q. Mr. Martin: That is, at that time?

A. Yes, sir.

Q. I don't think of anything else to ask you, but you are very familiar with all these matters, and perhaps you can think of something, and I am sure the court will permit you to testify.

A. The main point, sir, if I may express it, is this—that my instructions in coming out here were very hurried, and at the same time they were very clear, and the distinction which was in the minds of my clients is the same that appears in this agreement very clearly. In other words, the situation that was presented to the Penn Development Company—or, rather, the people who organized it—was, this particular piece of property, the Ventura-California Oil Company's property, would be lost unless it was bid in on the 11th of March by somebody, because the Pacific Petroleum Company didn't have the money, the Ventura-California Oil Company didn't have the money, and nobody who was interested in either one of those companies could raise the money to protect it against that sale. The Pacific Petroleum Company, as appears in this agreement, independent of the Ventura-California property, had a

(Testimony of William H. Cochran.)

number of so-called leaseholds or interests in property.

Q. You mean in other properties?

A. In other properties, yes, sir; all of which is specified in this agreement.

Q. By the Court: The Pacific Petroleum Company or the Pacific—

A. The Pacific Petroleum Company. That is the other defendant. Then naturally the Penn Development Company didn't want to come out here on a wild goose chase, and they felt if they got one piece of property they would have something to go ahead on, and therefore this agreement was made. But by this agreement the Penn Development Company agreed to purchase it, and then, even, fearing that somebody might quibble and say we were doing something for creditors or somebody else, the distinct provision was put in that the Penn Development Company was to take title to the same in fee simple absolutely without conditions or trust relations of any kind whatsoever except the Penn Development Company shall forthwith enter into an option in the form attached hereto as Exhibit A." In other words, that if they found this property was very valuable they had the privilege of buying it back within three years. The Pacific Petroleum Company can buy it back today, because the three years have not expired. Then as to these other matters, "The Penn Development Company agrees to advance"—certain money. I am reading from the contract. "The Penn Development Company agrees to advance for the purpose of preservation of the assets" —But that is after

(Testimony of William H. Cochran.)

they had agreed to buy the Ventura California property. There was never a suggestion by anybody in the East or in the West that the Penn Development Company was doing other than buying that property absolutely for itself, subject only to the option; and, as I say, Mr. Peters said to me that that is the only thing that disturbed Mr. Odell, and I heard Mr. Peters call Mr. Odell's office and talk to Mr. Odell,—at least he said he did—and Mr. Odell was satisfied with the agreement's execution and the option.

Q. By Mr. Martin: Is it not a fact, Mr. Cochran, that in buying that property at that sale it was bought with the understanding that the title was passing absolutely—or would pass absolutely—to the Penn Development Company and there were no liens against it, there were no arrangements about it, there were no agreements pertaining to it, but that you bought it absolutely and were getting it clear, and there was no understanding that they were to do anything about it, with the plaintiff in this action?

Mr. Odell: We object to that as calling for the conclusions of the witness. Let him state what was said and done.

A. Well, I can state it in this way—that I never had a conversation—

The Court: The objection is sustained, because the question calls for a conclusion of the witness as to what he thought the agreement was. The conversation is the proper evidence.

Mr. Martin: Exception.

Mr. Martin: I think he has stated the conversation,

(Testimony of William H. Cochran.)

and I do not think there is anything more I care to ask.

The Witness: Except I do want to state, in fairness to myself, that I never had a conversation with anybody relative to the Ventura-California agreement. Positively nobody.

Mr. Martin: That is all.

Cross-Examination by Mr. Odell:

(Witness testifies):

I was not nor am I now a stockholder in the Penn Development Company; I was not acquainted with the formation of the Penn Development Company as attorney; about the time the Penn Development Company was formed I had conversations with Mr. Dorsey in the East but I met Senator Dorsey just a very few days before this formation, although he had been out some months; the Penn Development Company was not formed for the sole purpose of acquiring these properties; it was not organized for the purpose of acquiring these and other properties; it had not been formed before Mr. Dorsey saw me; it was formed after he had consulted with my people in the East, and as a matter of fact it was formed about the day before or the very same day that the Penn Development Company agreement was executed; Senator Dorsey was not a stockholder in it and he had no interest in it whatsoever; it was incorporated either February 16th or 17, 1914. Well, I answered your question a moment ago just the way you put it to me, I would rather be a little frank to the court. You asked me if it was not for the purpose of taking over these various properties of the Pacific Petroleum Company and I said no;

(Testimony of William H. Cochran.)

but if you had asked me if it had not been formed with the very idea of being able to acquire the Ventura-California Oil Company property, in case the Penn bid it in, I would say yes; the Penn Development Company was not going to take over all these other properties; a new company had to be formed for that purpose, and if you will read that agreement through you will find that out. I don't remember at the time I came to see you at your office you asked me whether or not our arrangements included the carrying out of the Ventura-California Oil Company contract; in the way I have already testified, the Ventura-California Oil Company was mentioned to me, but Mr. Dorsey did not say in my presence that the contract would be taken care of and fully carried out; if he did say so, I didn't hear him, and I am frank in saying that I am sure he didn't say it, because we were all sitting very close together; I don't think Mr. Dorsey told you any more than what I have said was said at that time, and that was that if the general plan of the Penn Development Company went through and they did subsequently attempt to finance the Pacific Petroleum Company by making these advances, which do not include the Ventura-California Oil Company, then you people would be taken care of properly; every other officer of the Pacific Petroleum Company knew that too.

Redirect Examination by Mr. Martin:

(Witness testifies):

Another corporation was subsequently formed, but it did not take these properties over because they found

(Testimony of William H. Cochran.)

out the properties were so rotten that they did not want them.

The Court: Read that last long answer, Mr. Reporter.

(Answer read, as follows: "I don't think Mr. Dorsey told me any more than what I have said was said at that time, and that was that if the general plan of the Penn Development Company went through and they did subsequently attempt to finance the Pacific Petroleum Company by making these advances, which do not include the Ventura-California Oil Company, then you people would be taken care of properly.)

Mr. Odell: "Would be taken care of." That is the point.

Mr. Martin: Would be taken care of?

A. All creditors. These general plans of which I have spoken were independent of the Ventura as shown in this agreement, that if we could have gotten some general plans through by which these creditors aggregating as represented to us about \$25,000 but which ran to about \$125,000, could all have been gotten together to agree upon some policy and the stock and bondholders could have been gotten together to agree upon some plan, that as a whole proposition, then the advances would be made, but not otherwise; in other words, we could not come out here and deal with one and have the 99 simply hand it to us every minute; the whole 100 would have to come in and they certainly did not nor any of them, so that the general plan was never carried out and it was abandoned as soon as we found that the reports made to us were absolutely

(Testimony of William H. Cochran.)

false. As to the possession of this property at the time this suit was commenced, I would say that about the day after the sale, I caused some men to go right up to the property and we worked on the wells and they remained there until some time in August or September, 1914, after the war broke out, and they were then withdrawn. However, we went in later in the year and did the assessment work for that year, and have had continuous possession ever since, and, as a matter of fact, have men on the property now and have always done the assessment work ever since and nobody has ever attempted to interfere with our possession.

Defendant, Penn Development Company, rests.

(Testimony of Don C. Porter.)

Don C. Porter, called as witness on behalf of the defendant, Pacific Petroleum Company, testifies as follows:

I was one of the attorneys for the Pacific Petroleum Company in the case against the Penn Development Company in the Superior Court of this county in which a judgment for \$350,000.00 was rendered by default. That judgment has not been paid, nor any part of it, and it still remains in full force and effect.

Cross-Examination by Mr. Cochran:

(Witness testifies):

As one of the attorneys in the case I would know if that judgment had been paid.

Mr. Odell reads into the record a copy of the receipt for the interim bonds referred to in his direct examination, as follows:

(Testimony of Don C. Porter.)

"The Pacific Petroleum Company, a corporation organized under the laws of the state of Delaware, hereby acknowledges that it has sold to Stephen W. Dorsey of Los Angeles, Cal., \$25,000 of its first mortgage 6% bonds due August 1, 1923, to be issued under a mortgage made by the Pacific Petroleum Company to the Citizens Trust & Savings Bank of Los Angeles, California, dated July 24, 1913, and agrees to deliver the said bonds as soon as the same shall have been engraved and certified by said trustee, and said Pacific Petroleum Company agrees that upon the surrender of this certificate at the office of the Citizens Trust & Savings Bank of Los Angeles, California, after the engraving of said issues of bonds and delivery, and duly endorsed by said Stephen W. Dorsey, the said Citizens Trust & Savings Bank, as trustee, will deliver to said Stephen W. Dorsey as bearer \$25,000 of said mortgage 5% gold bonds of this company bearing coupons due on February 1, 1914, and all subsequent coupons. This receipt is given under the express provisions and authorization of Article I, Section 1, of said trust deed or mortgage made on July 24, 1913, by said Pacific Petroleum Company to said Citizens Trust & Savings Bank as trustee. Dated August 27th, 1913. Pacific Petroleum Company, by Edwin S. Jackson, president." "Not over \$25,000" stamped on it. Seal, "Pacific Petroleum Company, 1913, Corporate Seal." Indorsed, "Stephen W. Dorsey; witness, Albert G. Shaw." Indorsed, "D. L. Peters; witness, E. B. Rhodes, witnesses."

Plaintiff rests.

(Testimony of Don C. Porter.)

Mr. Porter: If the court please, I want to offer a little explanation as to our answer. In the second paragraph of our answer we deny positively that the \$15,000 payment had been made to the Ventura-California Oil Company. That answer was verified by Senator Dorsey, who was very positive in his statement to us that it had been paid. But he being dead now, we are not able to prove that allegation. I make that explanation as to why the answer is in there in that shape and there is no evidence offered in support of it.

(Testimony of William H. Cochran.)

William H. Cochran recalled as a witness on behalf of the defendant Penn Development Company by consent testified as follows:

Penn Development Company has not received any money or any income whatsoever from the property described in the complaint since it was purchased at that sale of March 11, 1914; no oil has been produced on that property since the company acquired it for the reason that we were unable to procure any; we had what was represented to be a very capable superintendent and we also had retained Mr. W. W. Orcutt, one of the geologists of the Union Oil Company, and after expending some \$8,000.00, or thereabouts, on the two wells that were on the property, they both advised the absolute abandonment of them as being incapable of producing any oil whatsoever.

Testimony closed.

(Testimony of William H. Cochran.)

The Court: You alleged in the second cause of action the value of the bonds.

Mr. Odell: Yes, sir.

The Court: You alleged the par value of them, but I don't know that you alleged the actual value of them. If you desire to amend the complaint, I will grant you permission to do so in order to have it conform to the testimony,—the testimony here is as to the value of the bonds.

Mr. Odell: Yes, sir, that they were guaranteed to us to be gilt edged and worth par; that was the testimony.

Mr. Cochran: We, of course, object to that and save an exception.

The Court: Very well.

The foregoing constitutes the "Statement of the Evidence" prepared under Equity Rule 75, by the defendant Penn Development Company, on its appeal herein, and submitted to this court for approval.

THEODORE MARTIN,

Solicitor for Defendant Penn Development Company.

Plaintiffs and respondents object to a settlement of a statement of the evidence on appeal on account of delay and lack of jurisdiction now to settle the same. The appeal was taken on the last day of the time in which it could be taken, to-wit, January 31, 1917, and more than eight months had elapsed since that time without a settlement of the statement of the evidence. No notice of any enlargement of time has ever been given to plaintiffs and respondents, and a term of

the Circuit Court of Appeals has been held since the appeal was taken.

The court, on July 24, 1917, made an order as follows:

"In the United States Circuit Court of Appeals for the Ninth Circuit.

PENN DEVELOPMENT COMPANY, a Corporation,

Appellant,

vs.

C. E. STONER, F. E. SCHAAD, D. L. PETERS,
E. B. RHODES and S. W. ODELL, Late Directors and Now Trustees of Ventura-California Oil Company, a Corporation,

Appellees.

Good cause appearing therefor, it is hereby ordered that the time for filing the record and docketing the cause in the United States Circuit Court of Appeals in the above entitled cause be extended to and including the 15 day of October, 1917.

Los Angeles, California, July 24th, 1917.

(Signed) OSCAR A. TRIPPET,
District Judge."

The foregoing statement of the evidence on the appeal of the defendant Penn Development Company in this action is hereby approved under Equity Rule No. 75.

Dated October 9, 1917.

OSCAR A. TRIPPET,
United States District Judge.

[Endorsed]: Original. No. B-7 Eq. Dept.
In the District Court of the United States, Southern District of California, Southern Division. C. E. Stoner, *et al.*, plaintiffs, vs. Pacific Petroleum Company, a corporation, *et al.*, defendants. Statement of the Evidence With Order Approving Same. Filed Oct. 9, 1917. Wm. M. Van Dyke, clerk; by R. S. Zimmerman, deputy clerk. Theodore Martin, suite 918 Security Building, Home phone F5834, Sunset Main 488, Los Angeles, Cal., solicitor for deft. Penn Development Company.

EXHIBIT "A."

(Printed at pages 11 to 15.)

EXHIBIT "B."

(Printed at pages 15 to 17.)

PLAINTIFF'S EXHIBIT "C."

DEED OF TRUSTEE.

This indenture, made this 11th day of March, A. D. 1914, by and between the Citizens Trust and Savings Bank, a corporation, organized and existing under the laws of the state of California, and having its principal office in the city of Los Angeles, in the county of Los Angeles, in the state of California, the party of the first part, and William H. Cochran, of the city of Philadelphia, in the state of Pennsylvania, trustee for the Penn Development Company, a corporation created and existing under the laws of the state of Delaware, the party of the second part,

Witnesseth: That whereas, on the 19th day of

February, A. D. 1913, The Ventura-California Oil Company, a corporation created, organized and existing under and by virtue of the laws of the state of California, and having its principal office in the said city of Los Angeles, did make and execute fifty promissory notes, each for the sum of one thousand (\$1,000.00) dollars, and numbered from one to fifty, both inclusive, aggregating the sum of fifty thousand (\$50,000.00) dollars, with interest thereon at the rate of seven per cent. per annum, payable semi-annually, on the 10th days of August and February in each year; all of said notes being made payable to "The Benson Investment Company, a corporation, or bearer;"

And whereas, on the said 19th day of February, 1913, the said The Ventura-California Oil Company, for the purpose of securing the payment of said notes in accordance with the terms thereof, made, executed, acknowledged and delivered a certain deed of trust, as party of the first part, to the said Citizens Trust and Savings Bank, as party of the second part, and the said The Benson Investment Company, as party of the third part, wherein and whereby the said The Ventura-California Oil Company granted, bargained, sold, conveyed, and confirmed unto the said Citizens Trust and Savings Bank, its successors or assigns, all that certain real and personal property situate in the Little Sespe Petroleum Mining District, in the county of Ventura, in the state of California, described as follows, to-wit:

Agasthenes Oil Placer Mining Claim, embracing lots four (4), five (5), ten (10) and eleven (11), in section five (5), township four (4) north, range nineteen (19) west, S. B. M., containing one hundred twenty

and 69/100 (120.69) acres; United States patent therefor is recorded in book 4 of patents, at page 257 et seq., in the office of the county recorder of Ventura county, California;

Agapetus Oil Placer Mining Claim, embracing lot nine (9) and the north one-half (N. $\frac{1}{2}$) of the southeast quarter (S. E. $\frac{1}{4}$) and the northeast quarter (N. E. $\frac{1}{4}$) of the southwest quarter (S. W. $\frac{1}{4}$), containing one hundred sixty (160) acres;

Agapenor Oil Placer Mining Claim, embracing lots six (6) and eight (8), and the west half (W. $\frac{1}{2}$) of lot seven (7), containing one hundred sixty (160) acres;

Agareni Oil Placer Mining Claim, embracing lots one (1), two (2) and three (3), and the east half (E. $\frac{1}{2}$) of lot seven (7), containing one hundred twenty-eight and 85/100 (128.85) acres;

All the above claims being in section five (5), township four (4) north, range nineteen (19) west, S. B. M.

Also the following personal property situate thereon:

Two 30 H. P. boilers, one 45 H. P. boiler, two 23 H. P. engines, two derricks complete, two sets rig irons, two sets rig timbers complete, casing, pipe line, one 50 barrel tank, one 1500 barrel tank, three 100 barrel tanks, one gasoline engine, together with an assortment of well drilling machinery and tools.

Said deed of trust is recorded in book 137 of deeds, at page 24 et seq., in the records in the office of the county recorder of said Ventura county;

And whereas, each and all of said notes and said deed of trust contain provisions and stipulations that should there be a default made in the payment of any installment of interest when due, then the whole sum

of principal and interest shall become immediately due and payable, at the option of the holder of said notes, or the holder of any of said notes;

And whereas, twenty-five of said notes, to-wit: Notes numbered one to twenty-five, both inclusive, were, on the date of their execution, delivered to the present holders thereof, and the said holders thereof having advanced the sum of twenty-five thousand (\$25,000.00) dollars as a consideration for said last mentioned notes;

And whereas, the first installment of interest on the said notes became due and payable on the 10th day of August, A. D. 1913, and default was, and has been, made in the payment of said interest, and every part thereof, no interest whatsoever having been paid on said last mentioned date, nor at any time since said last mentioned date, nor at all, on any of said notes; and the holders of said last mentioned notes, so numbered from one to twenty-five, both inclusive, having exercised their option and having declared that default has been made, as aforesaid, in the payment of interest, and having declared the whole of said sum of principal and interest on the said last mentioned twenty-five notes, due and immediately payable, and having demanded in writing that said trustee shall sell the said premises, so granted by said deed of trust, as herein set forth, and as more particularly set forth in the hereinabove mentioned deed of trust, to accomplish the objects of the trust herein expressed:

And whereas, the notes above mentioned, numbered from twenty-six to fifty, both inclusive, none of which has been issued or delivered, for the reason that the

said The Ventura-California Oil Company entered into an agreement with the said The Benson Investment Company, and by said agreement the said The Benson Investment Company was not required to loan to the said The Ventura-California Oil Company the sum of twenty-five thousand (\$25,000.00) dollars, or any part thereof, so to be represented by the said notes, numbered from twenty-six to fifty, both inclusive; and pursuant to said understanding and agreement the said The Benson Investment Company has not loaned to the said The Ventura-California Oil Company the said sum of twenty-five thousand (\$25,000.00) dollars, or any part thereof, or any sum whatsoever;

Whereas, in accordance with the request of the said holders of the said notes, so numbered from one to twenty-five, both inclusive, for the sale of said premises, the said Citizens Trust and Savings Bank fixed Tuesday, the 13th day of January, A. D. 1914, at the hour of 11 o'clock in the forenoon of said day, at the main entrance of the said Citizens Trust and Savings Bank, No. 308-310 South Broadway, in the said city of Los Angeles, in the county of Los Angeles, in the state of California, as the time and place for making said sale; and, in pursuance of the provisions of said deed of trust, notice of said sale was published in the Los Angeles Daily Journal, a newspaper printed and published daily (Sundays excepted) in the said city of Los Angeles, and also published notice of said sale in the Ventura Democrat, a newspaper printed and published daily in the city of Ventura, twice a week for six successive weeks next prior to said date so fixed for said sale, said notice containing, among other things,

the said time and place of sale, with a description of the herein described property; and, at the request of the said The Ventura-California Oil Company and the said The Benson Investment Company, the said Citizens Trust and Savings Bank did postpone the date of said sale to the 13th day of February, A. D. 1914, at the same hour and place mentioned, and again, at the request of the said The Ventura-California Oil Company and the said The Benson Investment Company, did again postpone the date of said sale to the 11th day of March, A. D. 1914, at the same hour and place, so mentioned in said notice, and said notice having been published successively twice a week in each of said papers every week from said 13th day of January, 1914, to the said 13th day of February, 1914, with the said notice of postponement made a part thereof; and said notice also having been published in both of said newspapers twice a week successively for each and every week between said 13th day of February, 1914, up to and including the said 11th day of March, 1914, with both of said notices of such postponement of said sale made a part thereof;

Whereas, under and by virtue of said deed of trust, and pursuant to said notice of sale, the said party of the first part herein, said Citizens Trust and Savings Bank, at the time and place fixed by said notice, and on the date mentioned in the last postponement thereof, to-wit: The said 11th day of March, A. D. 1914, for the payment of the principal and interest due on said notes, so mentioned, from one to twenty-five, both inclusive, aggregating twenty-six thousand, nine hundred forty-six and 61/100 (\$26,946.61) dollars, and the ex-

penses and expenditures incurred in carrying out the provisions and conditions of said trust, in the sum of two thousand, three hundred ninety-nine and $21/100$ (\$2,399.21) dollars, aggregating a total sum of twenty-nine thousand, three hundred forty-five and $82/100$ (\$29,345.82) dollars, offered for sale, at public auction, the premises and property herein described and, at such sale, the said William H. Cochran, trustee as herein mentioned, was the successful bidder therefor, bidding therefor the sum of twenty-nine thousand, three hundred forty-five and $82/100$ (\$29,345.82) dollars; the subscriber, said Citizens Trust and Savings Bank, sold said herein described premises and property to the said William H. Cochran, trustee for the said Penn Development Company, for the price last above mentioned;

Now, therefore, the said Citizens Trust and Savings Bank, trustee under the said deed of trust, the said party of the first part herein, for and in consideration of the said sum of twenty-nine thousand, three hundred forty-five and $82/100$ (\$29,345.82) dollars, receipt whereof is hereby acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell and convey, without warranty, unto the said William H. Cochran, trustee for said Penn Development Company, the party of the second part hereinabove mentioned, his heirs, administrators, executors and assigns forever, all of the herein described property and all of the right, title, estate and interest of the said The Ventura-California Oil Company, in and to the premises and property herein described, and also all the right, title, estate and interest

in and to said property of the said party of the first part herein, the said Citizens Trust and Savings Bank, being that certain real and personal property so situated in the Little Sespe Petroleum Mining District, in said county of Ventura, in the state of California, as follows, to-wit:

Agasthenes Oil Placer Mining Claim, embracing lots four (4), five (5), ten (10) and eleven (11), in section five (5), township four (4) north, range nineteen (19) west, S. B. M., containing one hundred twenty and 69/100 (120.69) acres; United States patent therefor is recorded in book 4, of patents, at page 257, *et seq.*, in the office of the county recorder of Ventura county, California.

Agapetus Oil Placer Mining Claim, embracing lot nine (9), and the north one-half ($N.\frac{1}{2}$) of the south-east quarter ($S.E.\frac{1}{4}$) and the northeast quarter ($N.E.\frac{1}{4}$) of the southwest quarter ($S.W.\frac{1}{4}$), containing one hundred sixty (160) acres.

Agapenor Oil Placer Mining Claim, embracing lots six (6) and eight (8), and the west-half ($W.\frac{1}{2}$) of lot seven (7), containing one hundred sixty (160) acres.

Agareni Oil Placer Mining Claim, embracing lots one (1), two (2), and three (3), and the east-half ($E.\frac{1}{2}$) of lot seven (7), containing one hundred twenty-eight and 85/100 (\$128/85) acres.

All of the above claims being in section five (5), township four (4) north, range nineteen (19) west, S. B. M.

Also the following property situate thereon:

Two 30 H. P. boilers, one 45 H. P. boiler, two 23

H. P. engines, two derricks complete, two sets rig irons, two sets rig timbers complete, casing, pipe line, one 50 barrel tank, one 1500 barrel tank, three 100 barrel tanks, one gasoline engine, together with an assortment of well drilling machinery and tools.

Together with all and singular the tenements, hereditaments, and appurtenances thereunto belonging, or in anywise appertaining; it being the intention of the grantor herein to convey hereby without warranty, however, all the estate, right, title and interest vested in said grantor herein by virtue of the said deed of trust of the said The Ventura-California Oil Company to said grantor, dated the 19th day of February, 1913.

To have and to hold, all and singular the above mentioned described premises and property, together with the hereditaments and appurtenances unto the said party of the second part, the said William H. Cochran, trustee for said Penn Development Company, his heirs, administrators, executors and assigns forever.

In witness whereof, the said party of the first part, the said Citizens Trust and Savings Bank, has caused these presents to be executed in its corporate name, and its corporate seal hereto attached, by its vice-president and secretary, the day and year in this instrument hereinabove written.

CITIZENS TRUST AND SAVINGS BANK,
(Corporate Seal)

By Leo S. Chandler, President.

By....., Secretary.

Notarial certificate attached.

Recorded March 31, 1914, in book 142 of deeds, page 234, records of Ventura Co., Calif.

[Endorsed]: Ventura-Cal. O. Co. vs. Pac. Pet. Co. et al. No. B 7 Eq. Compl's. Exhibit No. C. Filed June 9, 1916. Wm. M. Van Dyke, clerk; by Leslie S. Colyer, deputy clerk.

PLAINTIFF'S EXHIBIT "D."

This agreement, made this seventeenth day of February, A. D. 1914, by and between the Pacific Petroleum Company, a corporation organized and existing under and by virtue of the laws of the state of Delaware, party of the first part, and the Penn Development Company, a corporation organized and existing under and by virtue of the laws of the state of Delaware, party of the second part;

Witnesseth:

Whereas, Stephen W. Dorsey is the owner of a majority of the capital stock of the Pacific Petroleum Company, and

Whereas, the said Pacific Petroleum Company is under contract to purchase, in fee simple, certain oil properties in the state of California, and is the holder of certain leasehold interests in other oil properties in California; and

Whereas, the Pacific Petroleum Company has heretofore, under date of July 24th, 1913, executed its mortgage or deed of trust to secure certain bonds upon the said property when acquired; and

Whereas, none of said bonds have been so issued; and

Whereas, certain certificates have been issued by the

Pacific Petroleum Company, agreeing to deliver bonds if and when issued;

Whereas, certain of the agreed purchase price has not been paid on certain of the properties under contract of purchase as aforesaid; and

Whereas, certain underlying mortgages assumed by the Pacific Petroleum Company have not been paid; and

Whereas, the Pacific Petroleum Company is indebted to various parties, and is without means to pay said indebtedness; and

Whereas, the Pacific Petroleum Company is desirous of entering into an agreement under which its property may be, to such extent as may be found possible, preserved, upon the terms and conditions set forth in this agreement; and

Whereas, the property known as the Ventura-California property is about to be sold in proceedings under a trust deed.

Now, therefore, this agreement witnesseth, that in consideration of the premises, and of the mutual covenants herein contained, it is hereby agreed between the parties hereto, as follows, to-wit:

First: The Penn Development Company agrees to purchase at a sum not exceeding thirty thousand dollars (\$30,000) at the forthcoming trustee's sale, the title in fee simple of the Ventura-California property, described as follows:

"The Agasthenes Oil Placer Mining Claim, embracing lots four (4), five (5), ten and eleven, containing one hundred and twenty and 69/100 (120.69) acres.

The Agapetus Oil Placer Mining Claim, embracing

lot nine (9) and the north one-half ($\frac{1}{2}$) of the southeast quarter and the northeast quarter of the southwest quarter, containing one hundred and sixty (160) acres.

The Agapenor Oil Placer Mining Claim, embracing lots 6 and 8 and the west half of lot 7, containing 160 acres.

The Agareni Oil Placer Mining Claim, embracing lots 1, 2 and 3, and the east one-half of lot 7, containing 128.85 acres.

All in section 5, in the township 4 north, range 19 west, San Bernardino base and meridian, according to the surveys made by the United States Government and all situate in the Little Sespe Petroleum Mining District, in the county of Ventura, state of California, United States of America, and containing a total of 569.54 acres.

Together with the oil wells situate thereon, and the personal property thereon, used in connection therewith, including pumps, tanks, derricks, pipe lines, casing, drilling rigs, boilers and other tools and appliances."

The Penn Development Company is to take title to the same in fee simple absolutely without conditions or trust relations of any kind whatsoever, except the Penn Development Company shall forthwith enter into an option in the form attached hereto as Exhibit "A."

Second: The Penn Development Company agrees to advance for the purpose of the preservation of the assets of the Pacific Petroleum Company, the additional sum of thirty thousand dollars (\$30,000) over and

above the sum paid for acquiring the aforesaid Ventura-California property, which said sum shall be used and applied for the following purposes, to-wit:

\$6,500 simultaneously with the execution of this agreement, for the payment of labor and other claims against the Pacific Petroleum Company;

\$7,500 for the purchase or release, as the Pacific Petroleum Company may be advised by counsel, of a certain claim of \$7,500 secured upon the lease upon the Midway Five property, described as follows:

"The most westerly $\frac{3}{4}$ of the northeast $\frac{1}{4}$ of the southwest $\frac{1}{4}$ thirty acres, section 5-32-So. 23, east, M. D. B. M., known as the Midway Five Oil Company property.

Being a part of the premises described in the contract, dated April twenty-sixth, 1913, by and between D. L. Peters of Los Angeles, California, and Stephen W. Dorsey of the same place."

\$4,000 to be expended upon the cementing, redrilling and bringing into operation of the two existing wells on the Ventura California property;

The balance of the said \$30,000 to be expended upon such of the following items as shall be agreed upon by and between the said Dorsey and counsel for the Penn Development Company:

Maricopa-Union,	\$35,000.
Big Sespe,	\$17,000.
March Oil Company,	\$ 5,000.
Claim of the Oil Well Supply Company,	\$10,000
Claim of the Tay Pike Co.	\$ 4,000.
Leasehold Rentals,	\$6,500.

Labor and other charges for the completion or operation of existing wells.

Third: The Penn Development Company agrees to keep in its treasury an amount of preferred stock sufficient to raise the sum of forty thousand dollars, and further agrees that when and if said amount shall be so raised, such additional sum shall be expended on this joint agreement of the said Dorsey and counsel for the Penn Development Company upon the items set forth in paragraph "Two" hereof.

Fourth: The Pacific Petroleum Company hereby transfers, sets over and assigns to the Penn Development Company, all its right, title and interest of every kind and description in and to all the oil to be derived from the operation of all the properties owned or leased by it, or held by it under contract, to be held by the Penn Development Company, in trust:

A. To pay the expenses of operation in the production of the said oil, not including office expenses, or salaries of officers of the corporation;

B. To retain the monthly sum of two thousand five hundred dollars (\$2,500) for the period of four (4) months from the date hereof, and thereafter to retain the monthly sum of five thousand dollars (\$5,000) until all the money advanced for the benefit of the Pacific Petroleum Company shall have been paid to the Penn Development Company, or until such further period as shall be sufficient to pay to the Penn Development Company the amount to be paid under the option hereto attached as Exhibit "A" for the Ventura California property;

C. The balance to be used for the purposes of the

Pacific Petroleum Company for the liquidation of the items named in paragraph "Two" hereof, as the said Dorsey from time to time shall determine, and upon the property of the Pacific Petroleum Company as the said Dorsey and counsel for the Penn Development Company shall determine.

Fifth: The amount to be retained by the Penn Development Company under subdivision "B" of paragraph "Four" hereof, shall be pro rata increased to the extent that the portion of the forty thousand dollars (\$40,000) mentioned in paragraph "Third" hereof shall bear to the sum of sixty thousand dollars (\$60,000).

Sixth: In the event of the failure of the Penn Development Company becoming the purchaser at the sale of the Ventura California property after a bid of not exceeding thirty thousand dollars (\$30,000), no obligation shall exist upon the Penn Development Company to carry out any part of this agreement, but this agreement shall remain in full force and effect for the benefit of the Penn Development Company until the return to it of all sums theretofore advanced, together with all expenses incurred, and a counsel fee to counsel for the Penn Development Company.

Seventh: The Pacific Petroleum Company covenants and agrees that each and every of the aforementioned recitals are true as a matter of fact, and are part of the essence and consideration of this agreement, and do also covenant and agree as follows, to-wit:

A. That upon the payment of not exceeding \$30,000, a title in fee simple may and shall be pur-

chased by the Penn Development Company of the Ventura California property on March 11th, 1914, or on any adjournment thereof;

B. That such title as the Pacific Petroleum Company is entitled to receive from the owners of the Big Sespe property upon the payment of seventeen thousand dollars (\$17,000) in cash, shall be delivered to the Penn Development Company, to be held in trust for the performance of the terms and conditions of this agreement upon the payment by the Penn Development Company of the said sum of seventeen thousand dollars (\$17,000);

C. That the company owns the following leaseholds, subject only to the following liens, and upon the payment of the said liens, it has a full and complete title to the said leases:

Maricopa-Union,	\$35,000.
Midway Five,	\$ 7,500.
March Oil,	\$ 5,000.

D. That the company owns the following lease, subject only to the payment of rental thereon:

Pirie,	1,196 acres,
Piru,	4,700 acres,
Sturges,	2,200 acres,
Sexton,	1,700 acres,

E. That there are two wells on the Ventura California property; that the same were oil producing wells until September, 1913, and that the same can be and will be brought into operation by the expenditure estimated not to exceed four thousand dollars (\$4,000);

F. That there are in operation upon the Midway

Five property four wells producing not less than sixteen thousand barrels per month at the date of the last report, and that there is a further well redrilled and about to come into operation and a new well about to come into operation;

G. That there are four wells upon the Big Sespe property, having a production under normal conditions of eighty-two barrels per day;

H. That there are eight wells on the March oil property, now producing five thousand barrels per month;

I. That there is one well on the Maricopa-Union property, now producing four thousand eight hundred barrels per month, and one new well being drilled, now about 1860 feet depth, and the oil sand about 2,240 feet;

In witness whereof, the parties hereto have caused these presents to be signed by their respective presidents, and their respective corporate seals to be hereunto affixed, duly attested by their respective secretaries, the day and year aforesaid.

PACIFIC PETROLEUM COMPANY,

(Seal) By Stephen W. Dorsey, President.

Attest:

By Lawrence B. Fuller, Secretary.

PENN DEVELOPMENT COMPANY,

(Seal) By Charles H. Burr, President.

Attest:

By Joseph F. Cotter, Secretary.

State of Pennsylvania, County of Philadelphia—ss.

Be it remembered, that on this seventeenth day of

February, A. D. 1914, before me, the subscriber, a notary public in and for the state of Pennsylvania, residing in the city and county of Philadelphia, personally appeared Lawrence B. Fuller, who, being duly sworn according to law, doth depose and say that he was personally present and did see the common or corporate seal of the above named Pacific Petroleum Company affixed to the foregoing instrument. That the seal affixed is the common or corporate seal of the said Pacific Petroleum Company, and was so affixed by the authority of the said corporation as the act and deed thereof. That the above named Stephen W. Dorsey is the president of the said corporation and did sign the said instrument as such in the presence of this deponent. That this deponent is the secretary of the said corporation and that the name of this deponent above signed in attestation of the due execution of the said instrument is of this deponent's own proper handwriting. And that the execution and delivery of said instrument was duly authorized by the board of directors of said corporation.

LAWRENCE B. FULLER.

Sworn to and subscribed before me this day and year aforesaid.

(Seal) GEORGE KOPPENHOEFER, JR.,
Notary Public.

Notary Public, 328 Chestnut St., Phila., Pa. My commission expires March 10, 1917.

State of Pennsylvania, County of Philadelphia—ss.

Be it remembered, that on this seventeenth day of February, A. D. 1914, before me, the subscriber, a notary public in and for the state of Pennsylvania,

residing in the city and county of Philadelphia, personally appeared Joseph F. Cotter, who, being duly sworn according to law, doth depose and say that he was personally present and did see the common or corporate seal of the above named Penn Development Company affixed to the foregoing instrument. That the seal affixed is the common or corporate seal of the said Penn Development Company, and was so affixed by the authority of the said corporation as the act and deed thereof. That the above named Charles H. Burr is the president of the said corporation and did sign the said instrument as such in the presence of this deponent. That this deponent is the secretary of the said corporation and that the name of this deponent above signed in attestation of the due execution of the said instrument is of this deponent's own proper handwriting. And that the execution and delivery of said instrument was duly authorized by the board of directors of said corporation.

JOSEPH F. COTTER.

Sworn to and subscribed before me the day and year aforesaid.

(Seal) GEORGE KOPPENHOEFER, JR.,

Notary Public.

Notary Public, 328 Chestnut St., Phila., Pa. My commission expires March 10, 1917.

We, the undersigned, do hereby, as stockholders of the Pacific Petroleum Company, to the extent of our individual holdings, which holdings amount to more than a majority of the said stock, ratify and approve the execution of the foregoing agreement, and do further agree that at any and all times to take such further

steps, and to procure the taking of such further steps by the Pacific Petroleum Company as shall effectuate the obligations of this agreement if the same may be found necessary and requisite.

STEPHEN W. DORSEY.

.....

EXHIBIT "A."

Know all men by these presents, that we, the Penn Development Company, a corporation organized and existing under and by virtue of the laws of the state of Delaware, in consideration of the sum of one dollar (\$1.00) and other good and valuable consideration, the receipt whereof is hereby acknowledged, do by these presents grant unto the Pacific Petroleum Company, a corporation organized and existing under and by virtue of the laws of the state of Delaware, an exclusive option to purchase the following described property, known as the Ventura California Property, at any time within three years for the sum of two hundred thousand (\$200,000) in cash, and upon the further delivery to the Penn Development Company of twenty-five per cent of all the capital stock issued and outstanding issued by the Pacific Petroleum Company, or by its successor, less only as follows:

A. Such stock as may be retained in the treasury or issued pending the exercise of this option with the approval of counsel for the Penn Development Company for development or financing purposes;

B. Such stock as may be issued and delivered for the funding of indebtedness of the corporation;

C. Such stock as may be issued and delivered for

the payment in part purchase to other than the said Stephen W. Dorsey, for the part payment of the properties acquired by the Pacific Petroleum Company;

The following are conditions precedent to the exercise of the aforesaid option:

1st. All outstanding bonds or agreements to receive bonds shall be cancelled by the Pacific Petroleum Company and preferred stock issued therefor to an amount not to exceed \$600,000.00.

2nd. Such amount of the preferred stock as shall be agreed upon by Dorsey and the counsel for the Penn Development Company shall be left in the treasury of the company for sale for development purposes, and not less than one-third of the capital stock shall be left in the treasury for development purposes.

3rd. There shall be subtracted from the purchase price under this option:

(a) Twice such sum as shall comprise the difference between the amount advanced by the Penn Development Company and one hundred thousand dollars (\$100,000);

(b) Such sums as shall have been received by the Penn Development Company under the operation of subdivision "B" of paragraph "Four" of a certain agreement made and entered into between the Pacific Petroleum Company and the Penn Development Company, and dated the 17th day of February, 1914.

4th. The Pacific Petroleum Company shall at the option of the said Stephen W. Dorsey have the right to sell all of its assets for cash or other securities for such sum or sums as shall in the opinion of the said Stephen W. Dorsey and counsel for the Penn Develop-

ment Company not be equivalent to less than the total sum of two million dollars (\$2,000,000). Should such sale be made, one-half of the sum to be paid to the Penn Development Company under the terms of this option shall be subtracted from the twenty-five per cent to be received under the terms of this option by the Penn Development Company out of the proceeds of such sale.

5th. Should the Pacific Petroleum Company in its discretion after the repayment of the amount due to the Penn Development Company for advances cease the payment to the Penn Development Company is authorized to retain under subdivision "B" of paragraph "Four" of a certain agreement made and entered into between the Pacific Petroleum Company and the Penn Development Company, and dated the 17th day of February, 1914, this option shall forthwith terminate and expire.

In witness whereof, the Penn Development Company has caused these presents to be signed by its president, and its corporate seal to be hereunto affixed, duly attested by its secretary, this day of, A. D. 191..

PENN DEVELOPMENT COMPANY.

By

President.

Attest

By

Secretary.

[Endorsed]: Ventura-Cal. O. Co. vs. Pac. Pet. Co. et al. No. B 7 Eq. Compl's. Exhibit No. D. Filed June 9, 1916. Wm. M. Van Dyke, clerk; by Leslie S. Colyer, deputy clerk.

PLAINTIFF'S EXHIBIT "E."

Copy.

Los Angeles, Calif., Oct. 31, 1913.

Received from Stephen W. Dorsey, and in behalf of the Ventura California Oil Company, twenty-five thousand dollars (\$25,000.), 6%, ten year interim bonds of the Pacific Petroleum Company, and eleven thousand shares (11,000) of the capital stock of said Petroleum Company, as full payment to said company except the cash payment of fifteen thousand dollars (\$15,000.) and the payment of an existing trust deed against said Ventura Oil Company's property for twenty-five thousand dollars (\$25,000.), both of which are to be paid by the Pacific Petroleum Company, according to the terms of the agreement relating thereto.

VENTURA CALIFORNIA OIL COMPANY.

By

[Endorsed]: Ventura-Cal. O. Co. vs. Pac. Pet. Co. et al. No. B 7 Eq. Compl's Exhibit No. E. Filed June 9, 1916. Wm. M. Van Dyke, clerk; by Leslie S. Colyer, deputy clerk.

PLAINTIFF'S EXHIBIT "F."

*In the Superior Court of the State of California, in and
for the County of Ventura.*

VENTURA CALIFORNIA OIL COMPANY, a
Corporation,

Plaintiff,

vs.

PACIFIC PETROLEUM COMPANY, a Corporation,
STEPHEN W. DORSEY, PENN DEVELOP-
MENT COMPANY, W. H. COCHRAN, JOHN
DOE, RICHARD ROE, JANE DOE and MARY
ROE,

Defendants.

NOTICE OF ACTION.

Notice is hereby given that an action has been commenced in the above named court by the above named plaintiff against the above named defendants, which action is now pending; that the purpose of said action is for a judgment of this court requiring the defendants to pay to the plaintiff the sum of fifteen thousand dollars (\$15,000) with interest thereon from the first day of November, 1913, at the rate of seven per cent per annum, and the further sum of twenty-five thousand dollars (\$25,000) with interest thereon at the rate of seven per cent per annum from November 1, 1913, and the further sum of one hundred and ten thousand dollars (\$110,000) with interest thereon at the rate of seven per cent per annum from November 1, 1913, and that unless said payment be made within ten days from the final judgment in this action the defendants and all of them be forever foreclosed to any

right, title and interest to the premises or any part thereof, and the personal property described therein, and be adjudged to deliver up possession of all the property described therein, and be adjudged to deliver up possession of all the property to the plaintiff, and for other relief.

That the real property described in the complaint and affected by said action is located, situated and being in the Little Sespe petroleum district, in the county of Ventura, state of California, and is particularly described as follows:

The Agasthenes Oil Placer Mining Claim, embracing lots four (4), five (5), ten (10) and eleven (11), containing one hundred and twenty and 69/100 (120.69) acres.

The Agapetus Oil Placer Mining Claim, embracing lot nine (9) and the north one-half ($\frac{1}{2}$) of the southeast quarter and the northeast quarter of the southwest quarter, containing one hundred and sixty (160) acres.

The Agapenor Oil Placer Mining Claim, embracing lots six (6) and eight (8) and the west half of lot seven (7), containing one hundred sixty (160) acre.

The Agareni Oil Placer Mining Claim, embracing lots one (1), two (2) and three (3) and the east one-half of lot seven (7), containing one hundred twenty-eight and 85/100 (128.85) acres.

All in section 5, in the township 4 north, range 19 west, San Bernardino base and meridian, according to the surveys made by the United States Government and all situate in the Little Sespe petroleum mining district, in the county of Ventura, state of California,

United States of America, and containing a total of 569.54 acres.

Together with the oil wells situate thereon, and the personal property thereon, used in connection therewith, including pumps, tanks, derricks, pipe lines, casing, drilling rigs, boilers, and other tools and appliances.

Very respectfully,

TANNER, ODELL, ODELL & TAFT.

By S. W. Odell,

M. K. Young,

Attorneys for Plaintiff.

[Endorsed]: Indexed, compared.

Recorded at the request of Tanner, Taft & Odell Apr. 29, 1914, at 15 min. past 8 o'clock a. m., in book 4 of notices of Act, page 126, records of Ventura Co., Cal. J. L. Argabrite, county recorder; by, deputy recorder. \$1.40. No. B. Dept. In the Superior Court, county of Ventura, state of California. Ventura California Oil Company, a corporation, plaintiff, vs. Pacific Petroleum Company, a corporation, *et al.*, defendant. Notice of action. Tanner, Taft & Odell, 910-12 California Building. Main 1922; Home F 1922, Los Angeles. 202-4 Dudley Block; Main 31; Home 1132, Santa Monica. Boston Block, Main 1196; Home 1057, Pasadena, attorneys for plff.

Ventura Cal. O. Co. vs. Pac. Pet. Co., *et al.* No. B 7 Eq. Campl's. Exhibit No. F. Filed June 9, 1916. Wm. M. Van Dyke, clerk; by Leslie S. Colyer, deputy clerk.

DEFENDANT'S EXHIBIT "1."

This deed of trust, made this 19th day of February, A. D. 1913, between the Ventura-California Oil Company, a corporation organized and existing under the laws of the state of California, party of the first part, and Citizens Trust and Savings Bank, a corporation created and existing under the laws of said state, having its principal office and place of business in the city of Los Angeles, in the county of Los Angeles, in the state of California, party of the second part (and hereinafter sometimes called the trustee), and the Benson Investment Company, a corporation created, organized and existing under and by virtue of the laws of the state of Colorado, and having an office in the said city of Los Angeles, party of the third part.

Witnesseth: That whereas, the party of the first part has borrowed and received from Gilbert Samuel & Company, solicitors, of London, England, the sum of twenty-five thousand (\$25,000.00) dollars, in gold coin of the United States of America, and has also borrowed and received from the party of the third part the sum of twenty-five thousand (\$25,000.00) dollars, in like gold coin; said twenty-five thousand (\$25,000.00) dollars having been so loaned to the said first party by the said Gilbert Samuel & Company with the understanding that the first party would make, execute, and deliver twenty-five (25) promissory notes of one thousand (\$1,000.00) dollars each, running in favor of the said party of the third part to be endorsed by the party of the third part, with the further understanding that

the said third party would loan to the first party the sum of twenty-five thousand (\$25,000.00) dollars, and have executed and delivered to it, by the first party, a like number of notes for a like sum mentioned in each of said notes;

Wherefore, in consideration of the said loan aggregating the sum of fifty thousand (\$50,000.00) dollars, which the said party of the second part has agreed to pay in gold coin of the United States of America, of the present standard of fineness, with interest thereon at the rate of seven (7%) per cent per annum, payable semi-annually, and due on or before the 10th day of February, 1915; according to the terms of the fifty promissory notes, each and all of said notes are of even date herewith and are numbered consecutively from one to fifty inclusive, and payable to the said party of the third part or to bearer, and are in the following form, the only difference in one note from the other being the different number of the series, as follows:

"No. 1.

\$1,000.00

Los Angeles, California, February 19, A. D. 1913.

On or before February 10, 1915, for value received, The Ventura-California Oil Company, a corporation, promises to pay to The Benson Investment Company, a corporation, or bearer, at the Citizens Trust and Savings Bank, a corporation, in the city of Los Angeles, in the state of California, in the United States of America, the sum of one thousand (\$1,000.00) dollars, with interest thereon from February 10, 1913, until paid at the rate of seven (7%) per cent per annum,

payable on the 10th days of February and August in each year. Should the interest not be so paid, it shall become a part of the principal and thereafter bear like rate as the principal. Should default be made in the payment of any installment of interest when due, then the whole sum of principal and interest shall become immediately due and payable at the option of the holder of this note, principal and interest payable in gold coin of the United States of America of the present standard.

This note is one of fifty (50) promissory notes of like tenor and date of one thousand (\$1,000.00) dollars each, numbered consecutively from one to fifty inclusive, and aggregating a total sum of fifty thousand (\$50,000.00) dollars, each note having four interest coupons attached. Said notes are to rank *pari passu* without any preference or priority one over the other, and are all equally secured by a deed of trust of even date herewith duly executed by the holder of this note, thereby conveying to the said Citizens Trust and Savings Bank, as trustee, all the real and personal property, rights, and privileges now belonging to and owned by the maker of these notes, and are executed and issued subject to, and with the benefits of all the conditions, terms, and covenants contained in said deed of trust. Principal and interest payable at the said Citizens Trust and Savings Bank.

THE VENTURA-CALIFORNIA OIL COMPANY,

Corporate Seal

By W. S. Odell, President.

By D. L. Peters, Secretary."

Each of said fifty (50) notes having a trustee's certificate thereon, numbered 172:

"Trust No. 172.

Trustee's Certificate.

Los Angeles, California, February 25th, A. D. 1913.

The Citizens Trust and Savings Bank of Los Angeles, California, hereby certifies that this promissory note is one of the fifty notes referred to in the deed of trust mentioned in said note.

CITIZENS TRUST AND SAVINGS BANK,

By Chas. G. Greene, Trust Officer."

and each of said promissory notes having also four interest coupons, each and all of said coupons bearing said trust number 172, and being in the following form:

"On the 10th day of February, 1915, The Ventura-California Oil Company promises to pay to bearer, at the Citizens Trust and Savings Bank, in the city of Los Angeles, California, the sum of thirty-five (\$35.00) dollars, in gold coin of the United States of America, being six months interest at seven per cent (7%) per annum on its trust deed note No.

Dated, February 19th, 1913.

Attest: D. L. PETERS, Secretary."

Trust Deed

No. 172

Now, therefore, in consideration of the indebtedness evidenced by said notes, and for the purpose of securing the payment thereof with interest as therein provided, and also to secure the repayment of any sum of

money with interest thereon that may otherwise be or become due or payable to either the parties of the second or third part under the provisions of this instrument, said party of the first part does by these presents grant, bargain, sell, convey, and confirm unto said party of the second part that certain real property situate in the Little Sespe Petroleum Mining District, county of Ventura, state of California, described as follows:

Agasthenes Oil Placer Mining Claim, embracing lots four (4), five (5), ten (10) and eleven (11), in section five (5), township four (4) north, range nineteen (19) west, S. B. M., containing one hundred twenty and $69/100$ (120.69) acres; United States patent therefor is recorded in book 4 of patents, at page 257, *et seq.*, in the office of the county recorder of Ventura county, California;

Agapetus Oil Placer Mining Claim, embracing lot nine (9), and the north one-half ($N.1/2$) of the southeast quarter ($S.E.1/4$) and the northeast quarter ($N.E.1/4$) of the southwest quarter ($S.W.1/4$), containing one hundred sixty (160) acres;

Agapenor Oil Placer Mining Claim, embracing lots six (6), and eight (8), and the west half ($W.1/2$) of lot seven (7), containing one hundred sixty (160) acres;

Agareni Oil Placer Mining Claim, embracing lots one (1), two (2), and three (3), and the east-half ($E.1/2$) of lot seven (7), containing one hundred twenty-eight and $85/100$ (128.85) acres;

All the above claims being in section five (5), town-

ship four (4) north, range nineteen (19) west, S. B. M.

Also the following personal property situate thereon:

Two 30 H. P. boilers, one 45 H. P. boiler, two 23 H. P. engines, two derricks complete, two sets rig irons, two sets rig timbers complete, casing, pipe line, one 50 barrel tank, one 1500 barrel tank, three 100 barrel tanks, one gasoline engine, together with an assortment of well drilling machinery and tools.

To have and to hold the same upon the trusts hereinbefore and hereinafter expressed, to-wit:

First: During the continuance of this trust, the party of the first part agrees to pay, when due, all taxes, assessments and encumbrances which may be or appear to be liens upon said property, or any part thereof, including taxes levied or assessed upon the debt secured hereby, also including all corporation license or franchise tax imposed upon or against the said first party; to do, or cause to be done and performed, on or before the first day of November, in each year, the annual assessment work required by law to be performed upon unpatented mining claims, to keep the buildings thereon insured against loss by fire to the amount required by and in such insurance companies as may be satisfactory to the party of the third part, loss, if any, payable to the said party of the third part, and to keep said property in good condition and repair and to permit no waste thereof.

Should said property, or any part thereof, require inspection, repair, protection, or insurance other than that provided by party of the first part, or should the party of the first part fail and neglect to do, perform,

and complete said annual assessment work on or before the first day of November, in each year, then the parties of the second and third parts (they, however, are hereby made the sole judges as to the necessity therefor), may, without notice to the party of the first part, enter, or cause entry to be made, upon said property, and may inspect, repair, protect, or insure said property and do and perform the said annual assessment work, and in such manner or amount as they may deem necessary.

Said parties of the second and third parts, or either of them, at their option, may purchase, compromise or pay all or any adverse claims, liens or encumbrances affecting the title to said property or these trusts, or which, in their judgment, seem to affect the same, including the cost of such annual assessment work and repairs, and may contest any taxes, assessments, adverse claims, liens or encumbrances, and may prosecute or defend any suit or proceeding instituted for the enforcement thereof, and may settle and compromise any claims which, in their judgment, affect or seem to affect the title of said property or these *these* trusts, but they shall not be obligated to make any such payments or to perform any such service.

These trusts shall be and continue as security to said parties of the second and third parts for the payment of the indebtedness evidenced by said promissory notes, for the repayment of any sums that may be expended or advanced by parties of the second and third parts under the terms hereof, including attorney's fees, together with interest thereon at the same rate borne by the promissory notes hereinbefore mentioned, and

for the costs, fees, charges, and expenses of this trust and of any service rendered under the terms hereof.

Said party of the first part agrees to repay without demand all sums so advanced or expended by said parties of the second and third parts, or either of them, and a failure to pay said sums on or before the next date thereafter when an interest payment upon said promissory notes becomes due shall constitute a default for which all sums secured hereby shall become immediately due and payable at the option of the party of the third part, and for which the trustee may proceed to sell as hereinafter provided.

Second: If said party of the first part shall pay, or cause to be paid, when due, the indebtedness aforesaid with interest thereon, together with all other sums secured or intended to be secured hereby, and shall deliver to said trustee written notice from said party of the third part of the full payment thereof, and shall surrender the said promissory notes to said trustee, for cancellation, and upon demand shall pay all other sums secured or intended to be secured hereby, including the costs, fees, charges and expenses of this trust and of the reconveyance of the property aforesaid, then said trustee shall reconvey, without warranty, all the estate in the premises aforesaid to it by this instrument granted unto the said party of the first part, its successors and assigns, at its request and cost, or so much thereof as shall then be held by said trustee.

Third: If default shall be made in the payment of any of said sums of principal or interest when due, as provided in said promissory notes, or in the payment of any sums herein provided to be paid or repaid,

or of any of the interest thereon, then said trustee, on written demand by the party of the third part but without the necessity of making demand on the party of the first part for the payment of any of said sums, shall sell the above granted property, or such part thereof as it shall deem necessary to sell in order to accomplish the objects of these trusts.

Such sale shall be made in the following manner, namely:

Said trustee shall publish notice of the time and place of such sale, with a description of the property to be sold, at least twice a week for six successive weeks in some newspaper published in the city of Los Angeles, California, and may, from time to time, postpone such sale by publication of a notice of postponement in the same newspaper at least once each week prior to the date of the sale fixed by said notice of postponement, or at its option, by public announcement thereof at the time and place of sale so advertised; but, in case of sale of property situate outside of Los Angeles county, the notice of sale shall also in like manner be published in a newspaper published in the county in which the property is situated; but if there be no newspaper published in any county as often as twice a week, then such notice shall be published for six successive weeks in every issue of such newspaper published in such county during such period; and on the day of sale so fixed said trustee may sell the property so advertised, or any portion thereof, at public auction, either in said city of Los Angeles, or, at its discretion, in any county in which any part of said property may be situated, to the highest bidder for cash in said gold coin.

Said trustee may sell said property as a whole, or in such parcels or subdivisions as it may deem best, or part at one time and part at another time, and after any such sale and after due payment made, shall execute and deliver to the purchaser, or purchasers, but without covenant or warranty of any kind, express or implied, regarding the title or encumbrances;

And out of the proceeds of such sale, or sales, shall pay:

1st. The expenses of such sale, together with the costs, fees, charges, and expenses of this trust, including the compensation of the party of the second part as trustee hereunder in the sum of three hundred dollars, in said gold coin of the United States, which said amounts shall become due and payable upon any written demand made by the said party of the third part for the sale of the property mentioned in this instrument.

2d. All sums which may have been paid or advanced in accordance with the provisions hereof and not repaid, together with the interest accrued thereon.

3d. The amount due and unpaid on said promissory notes herein mentioned, with interest accrued thereon.

And, lastly: The balance or the surplus of such proceeds, if any, to the order of said party of the first part, its successors or assigns.

In the event of a sale of said property, or any part thereof, and the execution of a deed, or deeds, therefor under these trusts, then the recitals therein of default, publication of notice of sale, demand that such sale should be made, postponement of sale, terms of sale, purchaser, payment of purchase money, and any other

fact affecting the regularity or validity of such sale shall be conclusive proof of such facts; and any such deed, or deeds, shall be conclusive against all persons as to such facts recited therein; and the acknowledgment of the receipt of the purchase money contained in any deed executed to a purchaser, as aforesaid, shall be a sufficient discharge to such purchaser from all obligation to see to the proper application of the purchase money as herein provided.

This deed of trust secures the payment of all the indebtedness and the performance of all of the obligations hereinbefore referred to, and in all its parts applied to, inures to the benefit of, and binds the heirs, administrators, executors, successors and assigns of all and each of the parties hereto.

This deed of trust shall not be effective unless, prior to its recordation, the trust is accepted by said trustee, under its corporate name and seal, by a duly authorized official thereof.

In witness whereof, the party of the first part has hereunto caused its corporate name and seal to be affixed by its president and secretary thereunto duly authorized by a resolution passed by its board of directors at a legal meeting thereof duly convened and held on the 18th day of February, 1913.

THE VENTURA-CALIFORNIA OIL COMPANY,
(Corporate Seal) By S. W. Odell, President.
By D. L. Peters, Secretary.

The foregoing trust is hereby accepted,—Trust No. 172.

CITIZENS TRUST AND SAVINGS BANK,
(Corporate Seal) By Orra E. Monnette, President.
C. J. G.

State of California, County of Los Angeles—ss.

D. L. Peters, being first duly sworn, deposes and says that he is one of the officers of the Ventura-California Oil Company (to-wit, its secretary), the party of the first part mentioned in the foregoing and hereto attached deed of trust and mortgage.

That the aforesaid deed of trust and mortgage is made in good faith, and without any design to hinder, delay or defraud any creditor or creditors; that he makes this affidavit for and on behalf of said corporation.

D. L. PETERS.

Subscribed and sworn to before me this 19th day of February, 1913.

(Notarial Seal)

JOSEPH T. TATUM,

Notary Public in and for the County of Los Angeles,
State of California, Duly Commissioned and
Sworn.

State of California, County of Los Angeles—ss.

Orra E. Monnette, being first duly sworn, deposes and says that he is one of the officers of the Citizens Trust & Savings Bank, the corporation mentioned as the party of the second part in the foregoing and hereto attached deed of trust and mortgage; that the aforesaid deed of trust and mortgage is made in good faith and without any design to hinder, delay or defraud any creditor or creditors; that he makes this affidavit for and on behalf of said corporation.

ORRA E. MONNETTE.

Subscribed and sworn to before me this 24th day of February, 1913.

(Notarial Seal)

M. C. KENNEDY,

Notary Public in and for the County of Los Angeles,
State of California, Duly Commissioned and
Sworn.

State of California, County of Los Angeles—ss.

Albert G. Shaw, being first duly sworn, deposes and says that he is one of the officers of The Benson Investment Company, the corporation mentioned as the party of the third part in the foregoing and hereto attached deed of trust and mortgage.

That the aforesaid deed of trust and mortgage is made in good faith, and without any design to hinder, delay or defraud any creditor or creditors; that he makes this affidavit for and on behalf of said corporation.

ALBERT G. SHAW.

Subscribed and sworn to before me this 19th day of February, 1913.

(Notarial Seal)

JOSEPH T. TATUM,

Notary Public in and for the County of Los Angeles,
State of California, Duly Commissioned and
Sworn.

State of California, County of Los Angeles—ss.

On this 19th day of February, in the year one thousand nine hundred and thirteen, before me, Joseph T. Tatum, a notary public in and for said county of Los Angeles, state of California, residing therein, duly commissioned and qualified, personally appeared S. W. Odell, known to me to be the president, and D. L.

Peters, known to me to be the secretary of the Ventura-California Oil Company, the corporation that executed the within instrument, known to me to be the persons who executed the within instrument, on behalf of the Ventura-California Oil Company, the corporation therein named, and acknowledged to me that such corporation executed the same.

In witness whereof, I have hereunto set my hand and affixed my official seal in said county, the day and year in this certificate first above written.

(Notarial Seal) JOSEPH T. TATUM,

Notary Public in and for the County of Los Angeles,
State of California.

RATIFICATION BY STOCKHOLDERS.

Whereas, upon this nineteenth day of February, nineteen hundred and thirteen, the Ventura-California Oil Company, a corporation organized and existing under the laws of the state of California, has by its deed of trust conveyed in trust to the Citizens Trust & Savings Bank, a corporation having its principal place of business in the city of Los Angeles, county of Los Angeles, state of California, all of its real and personal property hereinafter described, for the purpose of securing the payment of fifty (50) promissory notes of one thousand dollars (\$1000.00) each of even date herewith, numbered consecutively from one to fifty inclusive, and all made payable to the order of "The Benson Investment Company, or bearer," and payable on or before February 10th, 1915, the said Benson Investment Company being the third party mentioned in said deed of trust, all of which is more particularly

set forth in said last mentioned instrument to which reference is hereby made.

Wherefore, the subscribers, each and all of whom are owners of and stockholders of record in the said The Ventura-California Oil Company, and owning and holding and also of record, the number of shares set opposite their names, said number of shares of said stock so set opposite their names aggregating a total of 284,831 shares, and being more than two-thirds of the issued capital stock of said last mentioned company, said corporation having an authorized capitalization of 500,000 shares.

Therefore, we, the said stockholders, do hereby consent that said conveyance be made and do hereby ratify and approve the action of the board of directors and the officers of this corporation in making such conveyance of the said hereinafter described property for the purpose herein mentioned, and more particularly mentioned in said deed of trust, said property being described as follows, to-wit:

Agasthenes Oil Placer Mining Claim, embracing lots four (4), five (5), ten (10) and eleven (11), in section five (5), township four (4) north, range nineteen (19) west, S. B. M., containing one hundred twenty and 69/100 (120.69) acres; United States patent therefor is recorded in book 4 of patents at page 257, *et seq.*, in the office of the county recorder of Ventura county, California:

Agapetus Oil Placer Mining Claim, embracing lot nine (9), and the north one-half (N.1/2) of the southwest quarter (S.W.1/4) and the northeast quarter

(N.E. $\frac{1}{4}$) of the southwest quarter (S.W. $\frac{1}{4}$), containing one hundred sixty (160) acres;

Agapenor Oil Placer Mining Claim, embracing lots six (6) and eight (8) and the west-half (W. $\frac{1}{2}$) of lot seven (7), containing one hundred sixty (160) acres;

Agareni Oil Placer Claim, embracing lots one (1), two (2), and three (3), and the east-half (E. $\frac{1}{2}$) of lot seven (7), containing one hundred twenty-eight and $\frac{85}{100}$ (128.85) acres;

All the above claims being in section five (5), township four (4) north, range nineteen (19) west, S. B. M.

Also the following personal property situate thereon:

Two 30 H. P. boilers, one 45 H. P. boiler, two 23 H. P. engines, two derricks complete, two sets rig irons, two sets rig timbers complete, casing, pipe line, one 50 barrel tank, one 1500 barrel tank, three 100 barrel tanks, one gasoline engine, together with an assortment of well drilling machinery and tools.

Names	Number of Shares.
D. L. Peters	186,855
S. W. Odell	84,976
C. E. Stoner	13,000

State of California, County of Los Angeles—ss.

On this 19th day of February, in the year one thousand nine hundred and thirteen, before me, Joseph T. Tatum, a notary public in and for said county of Los Angeles, state of California, residing therein, duly commissioned and qualified, personally appeared D. L. Peters, S. W. Odell and C. E. Stoner, known to me to be the persons whose names are subscribed to the

within instrument, and acknowledged to me that they executed the same.

In witness whereof, I have hereunto set my hand and affixed my official seal in said county, the day and year in this certificate first above written.

(Notarial Seal) JOSEPH T. TATUM,
Notary Public in and for the County of Los Angeles,
State of California.

Endorsed: Indexed in mortgages and chattel mortgages. Indexed. Compared. Deed of Trust. The Ventura-California Oil Company to Citizens Trust and Savings Bank, Trustee. Dated: February 19, 1913. Recorded at the request of trustee, Feb. 27, 1913, at 40 min. past 9 o'clock a. m., in book 137 of deeds, page 24, records of Ventura Co., Cal. J. L. Argabrite, county recorder; by, deputy recorder. Theodore Martin, suite 918 Security Building, Los Angeles, Cal. \$5.00.

Ventura-Cal. O. Co. vs. Pac. Pet. Co. et al. No. B 7 Eq. Deft's Exhibit No. 1. Filed June 9, 1916. Wm. M. Van Dyke, clerk; by Leslie S. Colyer, deputy clerk.

DEFENDANT'S EXHIBIT "2."

This indenture, made this 23rd day of March, A. D. 1914, by and between William H. Cochran of the city of Philadelphia, in the state of Pennsylvania, trustee for the Penn Development Company, a corporation created and existing under the laws of the state of Delaware, party of the first part, and the Penn Development Company, a corporation created and exist-

ing under the laws of the state of Delaware, party of the second part;

Witnesseth:

That the said William H. Cochran, as trustee aforesaid, for and in consideration of the sum of one dollar (\$1.00), and other good and valuable consideration to him in hand paid at and before the sealing and delivery of these presents by the Penn Development Company, a corporation organized and existing under the laws of the state of Delaware, and the receipt whereof is hereby acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell and convey unto the said Penn Development Company, the party of the second part herein above mentioned, its successors and assigns, all of the hereinafter described premises and property and also the right, title, estate and interest of the said party of the first part in and to the same, to-wit:

Agasthenes Oil Placer Mining Claim, embracing lots four (4), five (5), ten (10) and eleven (11), in section five (5), township four (4) north, range nineteen (19) west, S. B. M., containing one hundred twenty and $\frac{69}{100}$ (120.69) acres; United States patent therefor is recorded in book 4 of patents, at page 257, *et seq.*, in the office of the county recorder of Ventura county, California;

Agapetus Oil Placer Mining Claim, embracing lot nine (9), and the north one-half ($N.\frac{1}{2}$) of the southeast quarter ($S.E.\frac{1}{4}$) and the northeast quarter ($N.E.\frac{1}{4}$) of the southwest quarter ($S.W.\frac{1}{4}$), containing one hundred sixty (160) acres;

Agapenor Oil Placer Mining Claim, embracing lots

six (6) eight (8), and the west-half (W.½) of lot seven (7), containing one hundred sixty (160) acres;

Agareni Oil Placer Mining Claim, embracing lots one (1), two (2) and three (3), and the east-half (E.½) of lot seven (7), containing one hundred twenty-eight and 85/100 (128.85) acres;

All the above claims being in section five (5), township four (4) north, range nineteen (19) west, S. B. M.

Also the following personal property situate thereon:

To 30 H. P. boilers, one 45 H. P. boiler, two 23 H. P. engines, two derricks complete, two sets rig irons, two sets rig timbers complete, casing, pipe line, one 50 barrel tank, one 1500 barrel tank, three 100 barrel tanks, one gasoline engine, together with an assortment of well drilling machinery and tools.

Together with all and singular the tenements, hereditaments and appurtenances thereunto belonging or in any wise appertaining; it being the intention of the said party of the first part to convey unto the said party of the second part all the certain estate, right, title and interest vested in him by virtue of the certain deed or instrument in writing heretofore made to him by the Citizens Trust and Savings Bank, a corporation organized and existing under the laws of the state of California, dated the 11th day of March, 1914.

To have and to hold all and singular all the above mentioned and described premises and property, together with the hereditaments and appurtenances, unto the said party of the second part, the Penn Development Company, its successors and assigns forever.

In witness whereof, the said party of the first part, William H. Cochran, as trustee aforesaid, has hereunto set his hand and seal the day and year first hereinbefore mentioned.

WM. H. COCHRAN (L.S.)

Trustee for the Penn Development Company.

In the presence of

ALBERT G. SHAW.

State of California, County of Los Angeles—ss.

On this 23rd day of March, in the year nineteen hundred and fourteen, before me, Jennie S. Guthrie, a notary public in and for the county of Los Angeles, and state of California, residing therein, duly commissioned and sworn, personally appeared William H. Cochran, Trustee for the Penn Development Company, known to me to be the person whose name is subscribed to the within instrument, and who acknowledged to me that he executed the same as such trustee.

In witness whereof, I have hereunto set my hand and official seal the day and year in this certificate first above written.

(Seal)

JENNIE S. GUTHRIE,

Notary Public in and for said County of Los Angeles,
State of California.

[Endorsed]: Compared. Indexed March 23d, 1914. William H. Cochran, as trustee, etc., to Penn Development Company. Deed. Recorded at the request of grantee Mar. 31, 1914, at 10 min. past 11 o'clock a. m., in book 145 of deeds, page 29, records of Ventura Co., Cal. J. L. Argabrite, county recorder; by J. M. Argabrite, deputy recorder. \$1.20. Ventura-Cal. O.

Co. vs. Pac. Pet. Co. et al. No. B 7 Eq. Deft's Exhibit No. 2. Filed June 9, 1916. Wm. M. Van Dyke, clerk; by Leslie S Colyer, deputy clerk.

*In the District Court of the United States, Southern
District of California, Southern Division.*

No. B 7 Eq.

C. E. STONER, F. E. SCHAAD, D. L. PETERS,
E. B. RHODES, and S. W. ODELL, Late Direct-
ors and Now Trustees of Ventura-California Oil
Company, a Corporation,

Plaintiffs,

vs.

PACIFIC PETROLEUM COMPANY, a Corporation,
PENN DEVELOPMENT COMPANY, a Cor-
poration, W. H. COCHRAN, *et al.*,

Defendants.

Petition for Appeal.

The defendant Penn Development Company, a corporation, conceiving itself aggrieved by the final decree made and entered by the said court in the above entitled action on the first day of August, 1916, comes now, by Theodore Martin, Esq., its solicitor, and petitions said court for an order allowing the said defendant to prosecute an appeal from the aforementioned decree to the Honorable, the United States Circuit Court of Appeals for the Ninth Circuit, under and according to the laws of the United States in that behalf made and provided for, and also fixing the

sum of the security which the said defendant shall give and furnish upon such an appeal.

Dated January 31st, 1917.

THEODORE MARTIN,

Solicitor for Defendant Penn Development Company,
a Corporation.

[Endorsed]: No. B 7 Eq. Dept. In the District Court of the United States, Southern District of California, Southern Division. C. E. Stoner, *et al.*, plaintiffs, vs. Pacific Petroleum Company, *et al.*, defendants. Petition for Appeal. Filed Jan. 31, 1917. Wm. M. Van Dyke, clerk; by Chas. N. Williams, deputy clerk. Theodore Martin, suite 918 Security Building, Home phone F5234, Sunset Main 488, Los Angeles, Cal., solicitor for dft. and appellant Penn Development Company.

*In the District Court of the United States, Southern
District of California, Southern Division.*

C. E. STONER, F. E. SCHAAD, D. L. PETERS,
E. B. RHODES, and S. W. ODELL, Late Directors
and Now Trustees of Ventura-California Oil
Company, a Corporation,

Plaintiffs,

vs.

PACIFIC PETROLEUM COMPANY, a Corporation,
PENN DEVELOPMENT COMPANY, a Corporation,
W. H. COCHRAN, *et al.*,

Defendants.

Assignment of Errors.

Comes now the above named defendant Penn Development Company, a corporation, by its solicitor, Theodore Martin, Esq., and says that the final decree entered in this cause on the first day of August, 1916, is erroneous and unjust to this defendant; and it specifies and assigns the following as the errors asserted, intended to be urged and upon which it will rely on its appeal to the United States Circuit Court of Appeals for the Ninth Circuit, from the aforementioned final decree entered herein.

The Honorable Trial Court erred on the trial of this cause, and in its aforementioned final decree entered herein, in the following particulars, to-wit:

First: In adjudging and decreeing that "By said assignment (particularly described in paragraph 2 of said final decree) Pacific Petroleum Company assumed and agreed to pay the moneys to be paid as provided by said contract, and to perform all the covenants therein mentioned"; which said contract is also particularly described in the said paragraph 2 of said final decree.

Second: In not adjudging and decreeing that the certain alleged assignment from Dorsey to Pacific Petroleum Company of the contract, particularly described in paragraph 2 of said final decree, had not been ratified, nor accepted by said Pacific Petroleum Company; and that because no such ratification nor acceptance had been made, or given, the said Pacific Petroleum Company did not assume, nor was it bound to carry out any of the provisions, or covenants of

the contract in said assignment particularly described.

Third: In adjudging and decreeing that "there became due on November 1, 1913, from the Pacific Petroleum Company by virtue of said contract, to the said Ventura-California Oil Company, the sum of fifteen thousand dollars (\$15,000.00) in cash."

Fourth: In adjudging and decreeing that "there likewise became due to the said Ventura-California Oil Company first mortgage bonds on the 22d day of August, 1913, having a value of twenty-five thousand dollars (\$25,000.00)."

Fifth: In adjudging and decreeing that "said bonds
* * * cannot be delivered."

Sixth: In adjudging and decreeing that "there is now due, owing and unpaid the said sums with interest thereon at the legal rate of seven per cent per annum, as provided by the laws of the state of California, from the dates when the same became due from the Pacific Petroleum Company, a corporation, to the plaintiffs as trustees of the Ventura-California Oil Company, a corporation, a total sum of forty-seven thousand nine hundred fifty-one dollars (\$47,951.00)."

Seventh: In adjudging and decreeing that "the said amount is a part of the purchase price of said premises, and that plaintiffs as trustees of Ventura-California Oil Company, a corporation, have a first lien upon the said premises hereinafter mentioned by reason of their said contract for the payment of said amount, and that all the right, title and interest of the defendants Pacific Petroleum Company, Penn Development Company and W. H. Cochran, and all per-

sons or corporations claiming by, through and under them are inferior to and subject to the said lien."

Eighth: In adjudging and decreeing that the certain agreement between the defendants Pacific Petroleum Company and Penn Development Company, dated February 17, 1914, and the certain deed, dated March 11, 1914, of the property in question, from Citizens Trust & Savings Bank, trustee, to William H. Cochran, and also the deed of the same property, dated March 23, 1914, from said William H. Cochran, trustee, to said Penn Development Company (all which said instruments are particularly described and referred to in paragraph 3 of the aforementioned final decree), "were and are, in so far as the interests of the Ventura-California Oil Company and of plaintiffs are concerned, in the premises hereinafter mentioned, a mortgage, and as such are subject to and inferior to the title and rights of the plaintiffs herein."

Ninth: In adjudging and decreeing that, by the agreement between the defendants Pacific Petroleum Company and Penn Development Company, dated February 17, 1914, the said "Penn Development Company agreed to advance moneys to purchase" the property in question and at the sale particularly referred to in paragraph 3 of the aforementioned final decree.

Tenth: In adjudging and decreeing that the defendants Pacific Petroleum Company or Penn Development Company should pay to the plaintiffs the sum of forty-seven thousand nine hundred fifty-one dollars (\$47,951.00), with interest and costs.

Eleventh: In adjudging and decreeing that, in default of such payment of forty-seven thousand nine

hundred fifty-one dollars (\$47,951.00), with interest and costs being made as particularly provided for in paragraph 4 of the aforementioned final decree, that then and in that case the property in question should be sold in the form and manner in the said final decree specifically directed.

Twelfth: In adjudging and decreeing that out of the proceeds of the sale of the said property the aforementioned amount found due by the said final decree should be paid.

Thirteenth: In adjudging and decreeing that this defendant Penn Development Company "be forever barred and foreclosed from all equity of redemption and claim of, in and to said premises and any part and parcel thereof, if the same are not by said defendants, or either of them * * * redeemed according to law within twelve months from the date of said sale."

Fourteenth: In adjudging and decreeing that "if the said lands are not redeemed as aforesaid, then and in that case, * * * said special master shall make, execute and deliver to said purchaser, or purchasers * * * a good and sufficient conveyance in fee simple of such premises, or such part thereof as shall have been sold."

Fifteenth: In adjudging and decreeing that the defendant Pacific Petroleum Company, "is personally liable for the payment of the debt" in the aforementioned final decree particularly described and set forth; and that the said company should pay any deficiency therein, in the event of the proceeds of the decreed

sale of the property in question being insufficient to pay said debt in full.

Sixteenth: In not adjudging and decreeing that such lien, if any, which the said Ventura-California Oil Company might have had on the property in question by reason of the certain written instrument, dated July 22, 1913, between the said company and Stephen W. Dorsey, was inferior to and subject to the lien of the Citizens Trust & Savings Bank on the said property, under and by virtue of the certain deed of trust from the said Ventura-California Oil Company to the said Citizens Trust & Savings Bank, dated February 19, 1913 (Defendants' Exhibit 1).

Seventeenth: In not adjudging and decreeing that such lien, if any, which the said Ventura-California Oil Company might have had on the property in question by reason of the certain written instrument, dated July 22, 1913, between the said company and Stephen W. Dorsey was absolutely lost and extinguished by the foreclosure by the said Citizens Trust & Savings Bank of the aforementioned deed of trust (Defendants' Exhibit 1), and the public sale thereunder of the property in question, on March 11, 1914.

Eighteenth: In not adjudging and decreeing that the purchaser at said aforementioned sale of the property in question, to-wit, the defendant William H. Cochran, trustee for Penn Development Company, under and by virtue of said public sale and also the deed given pursuant thereto, dated March 11, 1914 (Plaintiffs' Exhibit C), acquired a good legal fee simple title to the property in question, free and clear of any lien, or encumbrance whatsoever, and particularly of any theretofore pos-

sible lien of the said Ventura-California Oil Company either by reason of the certain written instrument, dated July 22, 1913, between the said company and Stephen W. Dorsey, or otherwise whatsoever.

Nineteenth: In not adjudging and decreeing that the defendant Penn Development Company, thereafter on March 23, 1914, and under and by virtue of the certain deed, dated that day (Defendants' Exhibit 2) from the said William H. Cochran, trustee, to the said Penn Development Company, succeeded to and acquired all the right, title and interest of the said William H. Cochran in and to the property in question, and then became and still is the owner and holder thereof, in fee simple, free and clear of any lien, or encumbrance whatsoever, and particularly of any lien of the said Ventura-California Oil Company, either by reason of the certain written instrument, dated July 22, 1913, between the said company and Stephen W. Dorsey, or otherwise whatsoever.

Twentieth: In admitting in evidence the instrument, dated July 22, 1913, between Ventura-California Oil Company and Stephen W. Dorsey, which instrument was marked "Exhibit A."

Twenty-first: In admitting in evidence the alleged assignment, dated July 24, 1913, from Stephen W. Dorsey to Pacific Petroleum Company, of the instrument marked "Exhibit A"; and which said alleged assigned was marked "Exhibit B."

Twenty-second: In admitting in evidence the agreement between Pacific Petroleum Company and Penn Development Company, dated February 17, 1914, which was marked "Exhibit D."

Twenty-third: In admitting in evidence the testimony of plaintiffs' witness S. W. Odell, in response to the following question: "Q. Did you have any conversation with Mr. Cochran in regard to this property prior to the purchase of the property by Mr. Cochran as trustee of the Penn Development Company?" The witness testified, in substance, as follows: Mr. Cochran with Senator Dorsey called on him (the witness) possibly thirty days prior to the sale of the property. They (Ventura-California Oil Company) had been urging and requesting Mr. Dorsey to pay the interest on that Citizens Trust & Savings Bank trust deed in order to save foreclosure. That Mr. Dorsey, in the presence of Mr. Cochran, stated that he (Dorsey) had made an arrangement with the Penn Development Company by which that would be taken care of. That Mr. Cochran said that he was there in the interests of the corporation, which was being formed, and that the Ventura-California Oil Company need not be alarmed, that it would see that the contract with Dorsey would be carried out. Relying on these statements they (Ventura-California Oil Company) ceased efforts to negotiate a loan to take the matter up.

Twenty-fourth: In denying this defendant's motion to strike out all the testimony stated, in substance, in the twenty-third assignment of error.

Twenty-fifth: In admitting in evidence the statement of plaintiffs' witness S. W. Odell as to the value of certain bonds, in substance, that these bonds were represented to the Ventura-California Oil Company by the Pacific Petroleum Company to be first mort-

gage bonds, that they would be par value, gilt edge security for part of the purchase price of the property.

Twenty-sixth: In admitting in evidence the conclusions of the plaintiffs' witness S. W. Odell as to the contract between Pacific Petroleum Company and Penn Development Company, dated February 17, 1914.

Twenty-seventh: In denying this defendant's motion to strike out all the testimony of the plaintiffs' witness S. W. Odell, by which, and in which, he attempted to construe, or give any of his conclusions, or theories, or deductions, relative to the contract between Pacific Petroleum Company and Penn Development Company, dated February 17, 1914.

Twenty-eighth: In denying this defendant's motion to strike out all the testimony of the plaintiff's witness S. W. Odell.

Twenty-ninth: In denying this defendant's motion for judgment in its favor, made at the close of the plaintiffs' case.

Thirtieth: In admitting in evidence the statement of one of plaintiffs' attorneys, S. W. Odell, that the certain bonds of the Pacific Petroleum Company were guaranteed to the Ventura-California Oil Company, to be gilt edge and worth par.

Wherefore, this defendant Penn Development Company prays that the aforementioned final decree of this court, made and entered herein on the first day of August, 1916, be reversed and that this defendant have the relief demanded by its answer to the plaintiffs' second amended complaint herein.

All of which is respectfully submitted.

THEODORE MARTIN,

Solicitor for Defendant Penn Development Company.

[Endorsed]: B 7 Eq. Dept. In the District Court of the United States, Southern District of California, Southern Division. C. E. Stoner, *et al.*, plaintiffs, vs. Pacific Petroleum Company, *et al.*, defendants. Assignment of Errors. Filed Jan. 31, 1917. Wm. M. Van Dyke, clerk; by Chas. N. Williams, deputy clerk. Theodore Martin, suite 918 Security Building, Home phone F5834, Sunset Main 488, Los Angeles, Cal., solicitor for dft. and appellant Penn Development Company.

In the District Court of the United States, Southern District of California, Southern Division.

No. B 7 Eq.

C. E. STONER, F. E. SCHAAD, D. L. PETERS,
E. B. RHODES, and S. W. ODELL, Late Directors and Now Trustees of Ventura-California Oil Company, a Corporation,

Plaintiffs,

vs.

PACIFIC PETROLEUM COMPANY, a Corporation,
PENN DEVELOPMENT COMPANY, a Corporation, W. H. COCHRAN, *et al.*,

Defendants.

Order Allowing Appeal.

In the above entitled action, the defendant Penn Development Company, a corporation, having duly filed its petition for an order allowing it to prosecute an appeal from the final decree of this court made and

entered herein on the first day of August, 1916, and having also duly filed its assignment of errors:

Now, on motion of Theodore Martin, Esq , solicitor for the said defendant Penn Development Company, it is

Ordered that such appeal to the United States Circuit Court of Appeals for the Ninth Circuit be, and the same hereby is, allowed to the said defendant Penn Development Company, from the aforementioned final decree entered in this action on the first day of August, 1916. And it is further

Ordered that the amount of the said defendant's security and bond on said appeal be, and the same hereby is, fixed in the sum of two hundred and fifty dollars. And it is further

Ordered that, upon the filing of such security and bond, a certified transcript of the records and proceedings in this action be forthwith transmitted to the said United States Circuit Court of Appeals for the Ninth Circuit, in accordance with the statutes and the equity rules of the Supreme Court of the United States.

Dated January 31st, 1917.

OSCAR A. TRIPPET,

United States District Judge.

[Endorsed]: No. B 7 Eq. Dept. In the District Court of the United States, Southern District of California, Southern Division. C. E. Stoner, *et al.*, plaintiffs, vs. Pacific Petroleum Company, *et al.*, defendants. Order Allowing Appeal. Filed Jan. 31, 1917. Wm. M. Van Dyke, clerk; by Chas. N. Williams, deputy clerk. Theodore Martin, suite 918 Security Building,

Home phone F5834, Sunset Main 488, Los Angeles, Cal., solicitor for dft. and appellant Penn Development Company.

In the District Court of the United States, Southern District of California, Southern Division.

C. E. STONER, F. E. SCHAAD, D. L. PETERS,
E. B. RHODES, and S. W. ODELL, Late Directors and Now Trustees of Ventura-California Oil Company, a Corporation,

Plaintiffs,

vs.

PACIFIC PETROLEUM COMPANY, a Corporation,
PENN DEVELOPMENT COMPANY, a Corporation, W. H. COCHRAN, *et al.*,

Defendants.

Bond for Costs on Appeal.

Know all men by these presents, that the undersigned United States Fidelity & Guaranty Company, a corporation, duly organized and existing under the laws of the state of Maryland, duly authorized to transact business within the state of California, as surety, is held and firmly bound unto C. E. Stoner, F. E. Schaad, D. L. Peters, E. B. Rhodes and S. W. Odell, late directors and now trustees of Ventura-California Oil Company, a corporation, in the penal sum of two hundred fifty & no/100 dollars (\$250.00), well and truly to be paid to the said C. E. Stoner, F. E. Schaad, D. L. Peters, E. B. Rhodes and S. W. Odell, late directors and now trustees of Ventura-California Oil Company, a corporation, for the payment of which we

bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

Signed and sealed and dated at Los Angeles, California, this 31st day of January, 1917.

The condition of this obligation is such, that whereas, Penn Development Company, a corporation, the petitioner herein, has appealed to the United States Circuit of Appeals for the Ninth Circuit, from the final decree of the said District Court of the United States for the Southern District of California, Southern Division, made and entered of record in this cause on the 1st day of August, 1916.

Now, therefore, if the said Penn Development Company, a corporation, shall prosecute its said appeal to effect and answer all costs and damages that may be awarded against it on said appeal, if it fail to make its said appeal good, then this obligation shall be void, otherwise to be and remain in full force and effect.

In witness whereof, the seal and signature of the said surety company is hereto affixed and attested by its duly authorized attorney in fact at Los Angeles, California, district aforesaid, this 31st day of January, 1917.

UNITED STATES FIDELITY
& GUARANTY COMPANY,

(Seal)

By FRANK M. KELSEY,
Its Attorney in Fact.

State of California, County of Los Angeles—ss.

On this 31st day of January, in the year one thousand nine hundred and seventeen, before me, Hallie D. Wine-

brenner, a notary public in and for said county and state, residing therein, duly commissioned and sworn, personally appeared Frank M. Kelsey, known to me to be the duly authorized attorney-in-fact of the United States Fidelity and Guaranty Company, and the same person whose name is subscribed to the within instrument as the attorney-in-fact of said company, and the said Frank M. Kelsey duly acknowledged to me that he subscribed the name of the United States Fidelity and Guaranty Company thereto as principal and his own name as attorney-in-fact.

In witness whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

HALLIE D. WINEBRENNER,

Notary Public in and for Los Angeles County, State of California.

Approved 1/31/17.

TRIPPET, Judge.

[Endorsed]: No. B 7 Eq. In the District Court of the United States, Southern District of California, Southern Division. C. E. Stoner, *et al.*, plaintiffs, vs. Pacific Petroleum Company, *et al.*, defendants. Filed Jan. 31, 1917. Wm. M. Van Dyke, clerk; by R. S. Zimmerman, deputy clerk. Theodore Martin, attorney. United States Fidelity and Guaranty Company; Frank M. Kelsey, general agent, 700-703 Hibernian Building, Los Angeles, Cal.

*In the District Court of the United States, Southern
District of California, Southern Division.*

No. B 7 Eq.

C. E. STONER, F. E. SCHAAD, D. L. PETERS,
E. B. RHODES, and S. W. ODELL, Late Direct-
ors and Now Trustees of Ventura-California Oil
Company, a Corporation,

Plaintiffs,

vs.

PACIFIC PETROLEUM COMPANY, a Corpora-
tion, PENN DEVELOPMENT COMPANY, a
Corporation, W. H. COCHRAN, *et al.*

Defendants.

Praeipice for Transcript of Record on Appeal.

To the Clerk of the District Court of the United States,
Southern District of California, Southern Division,
Sir:

Into the transcript on the appeal in this action by
the defendant Penn Development Company to the
United States Circuit Court of Appeals for the Ninth
Circuit, please to incorporate the following portions
of the record in the said action, duly certified as re-
quired by law, and in accordance with the rules of
practice for the courts of equity of the United States,
to-wit:

The bill of complaint;

The second amended bill of complaint;

The answer of the defendant Penn Development
Company to the second amended bill of complaint;

The answer of the defendant Pacific Petroleum
Company to the second amended complaint;

The final judgment, or decree;

The assignment of errors filed by the defendant Penn Development Company;

The petition of the defendant Penn Development Company for an order allowing it to appeal from the final judgment, or decree, herein;

The order allowing such appeal of the said defendant Penn Development Company;

The bond given by the said defendant Penn Development Company on the said appeal;

The citation on the said appeal of the said defendant Penn Development Company;

The "Statement of the Evidence" given on the trial of this action, and prepared and filed as required by rule 75 of the aforementioned equity rules;

The paper exhibits as offered in evidence on the trial of this action, and referred to in the aforementioned "Statement of the Evidence."

THEODORE MARTIN,

Solicitor for the Defendant Penn Development Company

[Endorsed]: Original. No. B 7 Eq. Dept.
In the District Court of the United States, Southern District of California, Southern Division. C. E. Stoner, *et al.*, plaintiffs, vs. Pacific Petroleum Company, *et al.*, defendants. Praecipe for Transcript of Record on Appeal. Received copy of the within this 2nd day of March, 1917. Tanner. Odell & Taft, R. A. O., solicitors for plffs. Due and timely service of a copy of the within praecipe is hereby admitted this 2d day of March, 1917. Porter & Sutton, solicitors for defendant Pacific Petroleum Company. Wm. H. Cochran, deft. in person. Filed Mar. 2, 1917. Wm. M. Van Dyke, clerk; by Chas. N. Williams, deputy clerk. Theodore Martin, suite 918 Security Building, Home phone F5834, Sunset Main 488, Los Angeles, Cal.

United States
Circuit Court of Appeals, 2
FOR THE NINTH CIRCUIT.

Penn Development Company, a Corporation,

Appellant,

against

C. E. Stoner, F. E. Schaad, D. L. Peters, E. B. Rhodes and S. W. Odell, Late Directors and Now Trustees of Ventura-California Oil Company, a Corporation, Pacific Petroleum Company, a Corporation, and W. H. Cochran,

Appellees.

BRIEF FOR APPELLANT.

THEODORE MARTIN,
Solicitor for Appellant.

WM. H. COCHRAN,
Of Counsel.

No. 3107.

United States
Circuit Court of Appeals,
FOR THE NINTH CIRCUIT.

Penn Development Company, a Corporation,

Appellant,

against

C. E. Stoner, F. E. Schaad, D. L. Peters, E. B. Rhodes and S. W. Odell, Late Directors and Now Trustees of Ventura-California Oil Company, a Corporation, Pacific Petroleum Company, a Corporation, and W. H. Cochran,

Appellees.

BRIEF FOR APPELLANT.

STATEMENT OF THE CASE.

This appeal is from the final decree entered in the above entitled cause, by the District Court of the United States, Southern District of California, Southern Division.

The decree primarily, and *inter alia*, adjudges, in substance, that the defendant and appellee, Pacific Petroleum Company, is solely and personally liable for the payment of the certain debt of \$47,951.00, with interest, to the plaintiff and appellee, Ventura-California Oil Company, through its substituted trustees [Record, page 45]; that the said debt is a first lien upon the certain described real and personal property of the defendant and appellant, Perm Development Company [Record, page 38]; and that, in case of default in payment of the said debt, the said real and personal property should be sold to satisfy the same. [Record, page 40.]

The action was instituted and brought in the Superior Court of the State of California, in and for the County of Ventura. From that court the action was subsequently removed to the District Court of the United States, for the Southern District of California, Southern Division, in which it was heard and tried. And that Honorable Court, on August 1, 1916, made its final decree in the said action, which is now the subject of this appeal.

The second amended complaint, on which the trial of the action was had, sets forth two alleged causes of action.

The first alleged cause of action is that the defendants claim to have some interest in the real and personal property particularly described in the complaint; but that neither of the said defendants have any right, title, or interest whatsoever therein. [Record, page 19.]

The second alleged cause of action pleads a certain contract between the plaintiff, Ventura-California Oil Company, and one Stephen W. Dorsey, for the sale by the said company and the purchase by the said Dorsey of the property in question, upon certain specified terms and conditions of payment; the assignment to, and assumption by the Pacific Petroleum Company of the said contract; and a certain other agreement between the said Pacific Petroleum Company and Penn Development Company (this appellant), "by which it (Penn Development Company) obtained some interest in and to the said property, or some portion thereof, but such interest, if any it has, was taken subject to and with full knowledge of all the right, title and interest of the plaintiff." It further alleges that certain specified terms and conditions of the said Dorsey contract have not been paid, nor complied with, "and that by reason of said failure the said defendants, and each of them, have forfeited all right to said premises." [Record, pages 20 to 24.] And judgment is prayed that the amount thus alleged to be due, be ascertained by the court; and that if the same be not paid, the defendants be foreclosed from any right, title or interest in, or to the property in question. [Record, page 24.]

The defendant, Penn Development Company (this appellant), in its answer to the said second amended complaint, specifically denied each and every of the material allegations of that complaint; and affirmatively alleged its ownership and possession of the property referred to; and also affirmatively alleged, as a defense, that on March 11, 1914, it had purchased and

acquired, for a good and valuable consideration, the said property; and that ever since then it has been the owner, and in possession thereof. [Record, pages 26 to 29.]

The trial of the action established, *inter alia*, the following facts pertinent to the issues involved.

On February 19, 1913, and for the purpose of securing the payment of its certain specified and contemplated total loan and indebtedness of \$50,000.00 with interest (of which amount, however, by subsequent agreement between the respective parties, only \$25,000 in all was actually loaned), the said Ventura-California Oil Company made its certain deed of trust to the Citizens Trust and Savings Bank [Defendant's Exhibit 1—Record, page 126], and thereby conveyed to the said Citizens Trust and Savings Bank the certain real and personal property mentioned in the complaint (and which, at the time of the making of the said deed of trust, was owned and possessed by the said Ventura-California Oil Company), such conveyance being made upon, and for the trust purposes in said deed particularly specified, and which, in substance, were for the securing of the payment of the above mentioned loan and indebtedness, and, in case of default in such payment, then for the sale of the said real and personal property to satisfy and repay the same.

Subsequently, and by an instrument dated July 22, 1913, the said Ventura-California Oil Company and one Stephen W. Dorsey entered into a certain instrument in writing [Plaintiff's Exhibit A—Record, page 11], whereby the said company agreed to sell to the

said Dorsey, and the said Dorsey agreed to buy from the said company, the certain hereinbefore mentioned real and personal property, and also to pay the said company as follows, therefor:

(a) By transferring to the said company within thirty days from the date of the said instrument, 11,000 shares of Pacific Petroleum Company (one of the defendants and appellees herein), of the par value of \$110,000;

(b) By likewise transferring \$25,000 par value of first mortgage bonds of said Pacific Petroleum Company;

(c) By paying \$15,000 in cash, on or before November 1, 1913;

(d) By agreeing to assume and agree to pay the certain above mentioned indebtedness of the said Ventura-California Oil Company, secured by its aforementioned trust deed to Citizens Trust and Savings Bank, and which trust deed was then a lien against the aforementioned real and personal property.

By a certain other instrument in writing, dated July 24, 1913 [Plaintiff's Exhibit B—Record, page 15], the said Dorsey purported to assign to the said Pacific Petroleum Company the last aforementioned instrument, Plaintiff's Exhibit A.

On August 10, 1913, the day when the first installment of interest on the aforementioned indebtedness of the said Ventura-California Oil Company became due and payable, default was made in the payment thereof; and the holders of the said indebtedness, in accordance with the provisions of the aforementioned

trust deed, declared the whole of the principal sum of said debt, to-wit: \$25,000, with interest, to be due and immediately payable. [Record, page 103.]

Thereafter, the said Citizens Trust and Savings Bank, the trustee named in the said deed of trust, proceeded with the sale of the aforementioned real and personal property, as directed, and required of it by the said deed; and, on March 11, 1914, sold the same at public auction, unto "William H. Cochran, trustee for the Penn Development Company, a corporation, created and existing under the laws of the state of Delaware," for the sum of \$29,345.82, which was the highest bid received therefor. And, on the said March 11, 1914, the said Citizens Trust and Savings Bank also executed and delivered its proper deed of conveyance of the said real and personal property, unto the said William H. Cochran, as such aforementioned trustee. [Plaintiff's Exhibit C—Record, page 100.]

On March 23, 1914, the said Cochran conveyed the said real and personal property to the said Penn Development Company (the appellant herein). [Deed—Defendant's Exhibit 2—Record, page 142.] And the said company ever since then has been, and still is, the sole owner and holder of the said property.

The decree appealed from makes three primary and distinct findings, in substance, as follows:

1. That there are due and unpaid to the plaintiff, Ventura-California Oil Company, certain specified sums of money, under its contract [Plaintiff's Exhibit A] with Dorsey, providing for his purchase from the said company of the premises involved in this action; that

said sums are “a part of the purchase price of said premises, and that plaintiffs * * * have a first lien upon the said premises” for the payment thereof. [Decree—Record, page 38.]

2. That, in so far as the interests of the said Ventura-California Oil Company are concerned, the interests of this appellant, Penn Development Company, in the aforementioned premises, constitute and are only “a mortgage, and as such are subject to and inferior to the title and rights of the plaintiffs.” [Decree—Record, page 39.]

3. That in default of the payment of the aforementioned moneys, the aforementioned premises should be sold to satisfy and pay the same. [Decree—Record, page 40.]

To each and every of the said findings, *inter alia*, the defendant, Penn Development Company, has made its proper assignment of error on this, its appeal from the said final decree.

In What the Decree Appealed From Is Alleged, by This Appellant, to Be Erroneous.

On this appeal from the above mentioned final decree, the appellant duly filed and served its proper “Assignment of Errors” [Record, pages 148 to 156], in and by which appellant particularly specified and assigned the errors asserted, and intended to be urged, and upon which it would rely, on said appeal.

Appellant now states that the decree appealed from is erroneous in each and every of the particulars specified in said “Assignment of Errors.” But, in order to

“A.”

WAS THIS \$15,000.00 PAID TO PLAINTIFF?

The only testimony to support the alleged failure to pay the \$15,000.00 in question, was given by Mr. Odell, the president of the plaintiff company. He testified that he knew that it had not been paid. [Record, page 73.]

In view, however, of the verified answer of Pacific Petroleum Company, that such payment had been made, is it not significant that the plaintiff's treasurer and secretary, Mr. Peters, who apparently had full charge of the company's affairs, was not called as a witness? It appears in the record that Peters was not only the largest stockholder of the company [Record, page 141], but that he also “was the active manager in controlling the wells and trying to sell the property, he was our secretary and treasurer and RECEIVED THE MONEY and paid it out on orders of board of directors.” [Testimony of Odell—Record, page 54.]

The failure of the defendants to offer any proof to sustain their contention that this \$15,000.00 had been paid to the plaintiff, is fully explained by the statement of Mr. Porter, one of the attorneys for the Pacific Petroleum Company, that its “answer was verified by Senator Dorsey, who was very positive in his statement to us that it had been paid. But he being dead, now, we are not able to prove that allegation.” [Record, page 97.]

While all this may not constitute legal proof of either the payment, or non-payment, of the money in question, it certainly is of material importance to the case as a

whole; and considered in conjunction with certain other established facts—which will be discussed hereafter—tends to throw much light on the question of the good faith and legality of the plaintiff's claims in this action.

“B.”

THE REQUIRED BONDS WERE TRANSFERRED, OR, AT LEAST, THEIR EQUIVALENT WERE TRANSFERRED TO, AND ACCEPTED BY, THE PLAINTIFF, IN FULL SATISFACTION THEREFOR.

As to the \$25,000.00 par value of bonds called for by the Dorsey contract, Mr. Odell testified [Record, page 49] that they were not delivered to the plaintiff company. He admits, however, the company's receipt of the like amount of “so-called interim bonds.”

That the plaintiff, however, accepted these interim bonds in full satisfaction and payment of the terms of the Dorsey contract relative to the transfer of \$25,000.00 par value of Pacific Petroleum Company bonds, is incontrovertibly established by the instrument, Plaintiff's Exhibit E, which is signed by the plaintiff, and which formally acknowledges its receipt of the stock and interim bonds in question. That instrument is as follows [Record, page 122]:

“Los Angeles, Calif., Oct. 31, 1913.

Received from Stephen Dorsey, and in behalf of the Ventura-California Oil Company, twenty-five thousand dollars (\$25,000.00). 6%, ten year interim bonds of the Pacific Petroleum Company, and eleven thousand shares (11,000) of the capital stock of said Petroleum

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Company, AS FULL PAYMENT TO SAID COMPANY EXCEPT THE CASH PAYMENT OF FIFTEEN THOUSAND DOLLARS (\$15,000.00) AND THE PAYMENT OF AN EXISTING TRUST DEED AGAINST SAID VENTURA OIL COMPANY'S PROPERTY FOR TWENTY-FIVE THOUSAND DOLLARS (\$25,000.00), both of which are to be paid by the Pacific Petroleum Company, according to the terms of the agreement relating thereto.

VENTURA-CALIFORNIA OIL COMPANY,
By"

It was signed "By D. L. Peters" [Record, page 75], who was the secretary and treasurer of the said Ventura-California Oil Company. [Record, page 54.]

Inasmuch as plaintiff, by this instrument, acknowledges these so-called interim bonds to have been not only received by it, but also to have been received "IN FULL PAYMENT TO SAID COMPANY" of the terms and provisions of the Dorsey contract relative to Pacific Petroleum Company bonds, can plaintiff now be heard to say either that it did not receive said bonds, or that such bonds, as it did receive, did not satisfy the requirements of that contract?

The well established and generally recognized "Oral evidence rule, which declares evidence, the effect of which is to vary the terms of a written instrument, or to change, cut down, or alter the affect thereof, to be inadmissible" (McKelvey on Evidence, Sec. 274), precludes any attempt to vary, or modify, the terms of Plaintiff's Exhibit E, or the full force and legal effect thereof.

As a matter of fact, this instrument was offered in evidence by the plaintiff itself, was not in any way questioned or attacked, nor was a word of testimony given about it, other than as to its mere execution and delivery.

THIS EXHIBIT E, THEREFORE, CLEARLY ESTABLISHES THE PLAINTIFF'S LEGAL AND BINDING ACCEPTANCE OF THESE INTERIM BONDS, AS FULL PAYMENT AND SATISFACTION OF THE REQUIREMENTS OF THE DORSEY CONTRACT RELATIVE TO PACIFIC PETROLEUM COMPANY BONDS.

It may also be fairly contended that Plaintiff's Exhibit E operated as a modification of the Dorsey contract, if any such modification should be considered legally essential.

And further, as these interim bonds were accepted by the plaintiff "IN FULL PAYMENT," how can it now be heard to question their value?

But in any event, there is positively no testimony as to their value. Their expressed face value is, therefore, conclusively presumed to be the true one.

The second amended complaint alleges simply that, under the Dorsey contract, plaintiff was to receive "\$25,000.00 PAR VALUE of first mortgage bonds of Pacific Petroleum Company." As already shown, plaintiff accepted a like amount of this company's interim bonds "in full payment" of this provision of the Dorsey contract. AS ONLY "PAR VALUE" was agreed on in the contract, and as such value was also the only claim relative to these bonds, made in the complaint, how can the question of their actual value be material, or rele-

vant to the issues in this action? But, as already said, there is no testimony whatsoever, as to their actual value, or that these interim bonds did not have their full expressed face value.

The decree appealed from adjudges that there was due to the plaintiff, under the Dorsey contract, bonds “having a *value* of twenty-five thousand dollars (\$25,000.00); that said bonds were not delivered and have not and cannot be delivered” [Record, page 38]; and that \$25,000.00 therefor is due to the plaintiff.

There is no evidence to support any one of these findings.

As to the “value” of the bonds, it has been already shown that it was only “par value,” which was agreed on in the Dorsey contract, and sued for in the second amended complaint. Mr. Odell apparently attempted, in the face of appellant's overruled objection, to place some other value on these bonds, by testifying [Record, page 53] that it was represented that “they would be par value, gilt edge security.” He again, however, emphasized that only “par value” was agreed on in the Dorsey contract; but he apparently attempted to prove some further, independent, oral representation, that the bonds were to be “gilt edge security.” What is meant by this later characterization is not explained, nor made clear. And there is no authority for a court to presume, or assume, that, even if used, it meant that the actual value of the bonds would be the equivalent of the expressed face and par value. As is well known, the every day dealings in bonds of the character of the bonds here in question, show that the actual value

thereof is practically always lower than the par value. But moreover (as discussed, *supra*), oral testimony is not admissible, particularly against objection [Record, page 53], to vary the expressed terms of the contract itself, that the bonds should have only a "par value" of \$25,000.00. And it is repeated, that there is not one word of testimony as to the actual value of the accepted interim bonds, let alone that they had any other value than as expressed on their face. If this alleged representation was made, and was relied upon by the plaintiff, and in fact was intentionally false and not a mere matter of opinion, then it may well be that plaintiff has some action for damages against Dorsey. But such a claim certainly is not pertinent to the issues involved in this action; nor can such damages be collected herein.

The "delivery" of the bonds has also been discussed, *supra*, and while, as found in the decree, the actual bonds were not delivered, it is submitted that their equivalent were delivered, and certainly accepted by the plaintiff in lien thereof.

Nor is there any testimony, let alone evidence, to sustain the finding of the decree that these bonds "cannot be delivered." The failure of the plaintiff to offer any evidence on this point is particularly emphasized by the fact that the defendant, Pacific Petroleum Company, in its answer, affirmatively alleged that it "has been hindered and delayed in the actual issuance and delivery of its bonds * * * but that this defendant intends in good faith to execute and deliver its said bonds." The initiative and burden of proving what has thus been so erroneously adjudged in the de-

cree, certainly rested on the plaintiff; and yet it offered no proof relative thereto.

This appellant respectfully submits that the requirements of the Dorsey contract for the transfer of certain bonds have been fully satisfied and performed.

II.

Pacific Petroleum Company Did Not Assume the Contract Between Ventura-California Oil Company and Dorsey.

Even assuming that either, or both of the sums of money specified in the decree are due and payable to the plaintiff, under the Dorsey contract, this appellant contends that such sums are the obligations and indebtedness solely of the said Dorsey; and that the said Pacific Petroleum Company never did legally assume the payment thereof, nor is the said company in any way liable for the same.

The final decree herein adjudges [Record, page 38] that, by the certain alleged assignment [Plaintiff's Exhibit "B"—Record, page 15] from Dorsey to Pacific Petroleum Company, of the Dorsey contract [Plaintiff's Exhibit "A"], the said company "assumed and agreed to pay the moneys to be paid as provided by said contract, and to perform all the covenants therein mentioned"; and further [Record, page 45], that the said "Pacific Petroleum Company * * * is personally liable for the payment of the debt" created thereby.

This alleged assignment [Plaintiff's Exhibit "B"], in terms, purports to assign to the said Pacific Pe-

troleum Company the said Dorsey contract [Plaintiff's Exhibit "A"], "subject to all the conditions contained in said agreement upon the part of the party of the first part herein (Dorsey) to be performed and which the party of the second part herein (Pacific Petroleum Company) agrees to perform."

This alleged assignment [Plaintiff's Exhibit "B"] is signed and executed solely by the said Dorsey. And there is not the slightest suggestion of any proof that it was made with either the knowledge, or the consent of the said Pacific Petroleum Company; nor that it was ever received, or accepted by, or even brought to the knowledge of the said company; nor that it was ever formally ratified, and the Dorsey contract assumed, as the law requires for the legal and binding assumption of the debt of another. (California Code of Civil Procedure, Sec. 1973.) Whatever liabilities, if any, were created by the Dorsey contract, were unquestionably solely and exclusively against Dorsey personally. And such liabilities cannot be shifted from his shoulders, and made the obligations of another, unless such third party legally assumes such liability, in the form and manner required by the statute of frauds, just cited.

The appellant contends that this alleged assignment is invalid under the statute of frauds, at least in so far as it undertakes to put on Pacific Petroleum Company any liability for Dorsey's obligations under his contract, Plaintiff's Exhibit "A."

California Code of Civil Procedure, Sec. 1973, provides as follows:

"In the following cases the *agreement is invalid*, unless the same, or some note, or memorandum thereof be in writing, *and subscribed by the party charged*, or by his agent. * * *

"2. A special promise to answer for the debt, default, or miscarriage of another, except in the cases provided for in section twenty-seven hundred and ninety-four of the Civil Code."

California Civil Code, Sec. 1624, provides to like effect.

Nor does this case come within any of the exceptions to the statute of frauds, provided for in Sec. 2794 of the California Civil Code.

As this alleged assignment, Plaintiff's Exhibit "B," was not subscribed by the Pacific Petroleum Company, it is invalid, under this statute, in so far, at least, as it purports to make that company liable for the payment of any of the moneys, or the performing of any of the covenants, or obligations, provided for by the Dorsey contract.

The plaintiff itself practically concedes the correctness of this proposition of law, and forcibly emphasizes it, in the second amended complaint. In its original complaint, plaintiff alleged in paragraph III [Record, page 6], simply that in and by the "said assignment, the said defendant, Pacific Petroleum Company, agreed to perform all the covenants on the part of said Dorsey contained in said contract to be performed and assumed and agreed to pay all the payments provided therein." In its second amended complaint, second cause of

action, paragraph III [Record, page 22], plaintiff not only repeats this allegation, but also supplements it with the further allegation that the said defendant, Pacific Petroleum Company, "*accepted said assignment and entered into possession of said property.*"

It must, therefore, be apparent that the plaintiff at last recognized the futility of its claim that Pacific Petroleum Company had become liable for any of Dorsey's indebtedness and obligations under his contract with the plaintiff, simply because of the mere recital of the assumption thereof in the Dorsey assignment. And in its second amended complaint the plaintiff clearly attempted to bolster up its position, and to bring the assignment within the provisions and conditions of the statute of frauds, by alleging that the Pacific Petroleum Company "*accepted said assignment and entered into possession of said property.*"

Passing the question as to whether or not such so-called acceptance of that assignment and entry on the property, even if made, would take the case without the statute, *not a scintilla of proof was offered at the trial to show either the alleged acceptance of this assignment by the Pacific Petroleum Company, or that the company ever entered upon the property in question.* Nor was any finding relative thereto, made in the final decree now appealed from.

That Pacific Petroleum Company did not assume the Dorsey contract, nor did even the plaintiff look to that company for its performance, is also clearly established by the receipt, which the plaintiff gave for the stock and bonds called for by that contract. That receipt

[Plaintiff's Exhibit "E"—Record, page 122] acknowledges that these stock and bonds were "*received from Stephen W. Dorsey.*" As this receipt was not given until October 31, 1913—several months after the alleged assignment—why did it not run to Pacific Petroleum Company, if that company had undertaken to perform the Dorsey contract, as plaintiff now claims? Does not this receipt truly show that Dorsey himself was endeavoring to carry out his own contract; and that the plaintiff was looking to him solely for its performance?

Aside also from the law relative thereto, as just presented, to argue that such an *ex parte* assignment could possibly legally bind a third party—even although his assumption of liability is set forth in the instrument—seems such an affront to ordinary intelligence, let alone to courts of law and equity, that it is hardly creditable such a claim, or argument will be presented by the plaintiff-appellee.

III.

Even Although Any Moneys May Have Become Due to the Plaintiff Under the Dorsey Contract, Such Moneys Were Not and Are Not a Lien Upon the Property Involved in This Action.

The decree herein adjudges that the \$15,000.00 in cash, and the \$25,000.00 par value of bonds of Pacific Petroleum Company, provided to be respectively paid and transferred by the Dorsey contract, to the plaintiff, are due and unpaid, and that the same are "a part of the purchase price of said premises, and that plaintiffs

* * * have a first lien upon the said premises” for the payment thereof. [Decree—Record, page 38.]

It is impossible to find any testimony in the case, or to discover any theory, principle, or rule of law or equity, which would even tend to support this finding of the decree.

The most cursory examination of the Dorsey contract, Plaintiff’s Exhibit “A” [Record, page 11], shows that it is nothing more than an agreement for sale and purchase—Ventura-California Oil Company (the plaintiff) agreeing to sell, and Dorsey agreeing to buy, the property in question, on certain specified terms and conditions. And even this plaintiff so characterizes it in its second amended complaint. [Record, pages 20 and 22.]

This contract provides that *should Dorsey “fail to pay any of the sums * * * provided to be paid or transfer to the party of the first part (plaintiff herein) the bonds or the capital stock * * * mentioned, then and in such case the party of the first part may proceed to collect the value thereof by any proper action, or may foreclose this contract, and in such case the party of the second part (Dorsey) shall forfeit all moneys, bonds, or stocks theretofore paid hereon.”* [Record, page 13.]

This contract further provides that “upon full payment being made, as herein agreed, the party of the first part agrees to make, execute and deliver sufficient deeds to transfer all of its title to the party of the second part.” [Record, page 14.]

It is, therefore, clearly apparent that the plaintiff did not part with any of its title to the property, nor did Dorsey acquire any title to it. The contract cannot, in any way, be construed as a conditional sale, under which, of course, title to the property would have passed, and any unpaid part of the agreed purchase price would have been a lien on it. The contract is purely and simply Dorsey's contract to make certain payments, which, if made, would entitle him to a deed of the property; and if he failed to make such payments, then action might be brought against him for their recovery.

But as the plaintiff retained the full and complete title to the property, on what possible theory can it be held that any possibly unpaid moneys under this contract, are a lien on the property? *How is it possible for the absolute legal owner of property, to also have a lien on it? How can he have a lien on what he owns?*

Appellant further contends, that even assuming, for the sake of this argument, that any moneys were due to the plaintiff under the Dorsey contract, and that plaintiff at one time might have had a lien therefor on the property herein involved, such lien, if any, was totally extinguished and lost, by the public foreclosure sale of the said property, by Citizens Trust and Savings Bank, under the aforementioned trust deed.

Before taking up any presentation of this contention, it is important, and also instructive, as throwing some side light on plaintiff's real attitude in this case; to exactly fix the dates when the Dorsey contract, and the alleged assignment thereof, were respectively actu-

ally made, and respectively became legally effective; and also the relative standing of said instruments with the plaintiff's trust deed.

The trust deed from plaintiff to Citizens Trust and Savings Bank was dated, completely executed, and delivered on February 19, 1913; and was recorded on February 27, 1913. [Record, pages 126 to 142.]

As to the Dorsey contract, the second amended complaint alleges simply that "on the 22nd day of July, 1913," this contract was entered into. [Record, page 20.]

As to the alleged assignment of this contract, the second amended complaint alleges [Record, page 22] that "by a written assignment bearing date of June 24, 1913," the said contract was assigned to Pacific Petroleum Company; and "that said assignment was duly acknowledged." The date of such acknowledgment is not, however, set forth.

Both this contract and the alleged assignment thereof, were recorded on the same day, viz., on October 19th, 1913. [Record, pages 5 and 6.] The statement of this recordation having been made on "August 19, 1913," which appears on page 49 of the record, is an apparent error as to the month.

The original contract [Plaintiff's Exhibit A] shows that, while it was dated July 22, 1913, it was not actually executed and acknowledged until August 13, 1913. [Record, page 14.]

Likewise, the original assignment [Plaintiff's Exhibit B] of this contract shows that, while it was dated July 24, 1913, it was not actually executed and acknowledged until August 16, 1913. [Record, page 16.]

The finding in the decree [Record, page 37] that this contract was entered into "on the 22nd day of July, 1913," is, therefore, clearly erroneous, for it is beyond question that any contract is complete until actually executed, acknowledged and delivered, no matter what date it may bear. And it is only then that a contract can be legally said and held to have been "entered into."

But why all this juggling of dates; and the attempted evasion of the true and complete facts?

Is it not most significant that both these instruments are *dated just before, but not actually executed until just after* the Ventura-California Oil Company had defaulted on August 10, 1913 [Record, page 103], in the payment of its interest due that day, to the Citizens Trust and Savings Bank, under its trust deed, and the whole of the principal sum secured thereby had also become due and payable?

The Dorsey contract was, of course, subordinate, in every way, to the plaintiff's trust deed. But, in as much as it was not executed and delivered until after plaintiff had defaulted in carrying out the terms and provisions of this trust deed, the contract became further subject to all the equities, which legally and equitably arose on such default, and on the declaring of the whole of the principal debt to be "due and immediately payable."

When the first installment of interest on the indebtedness secured by this trust deed became due and payable on August 10, 1913, and default in the payment thereof was made by the plaintiff herein, the whole of

the principal and interest of said indebtedness was declared due and immediately payable [Record, page 103]; and the said trustee proceeded to sell the property involved in this action in the form, manner and as required by its trust deed. On March 11, 1914, the said property was offered for sale at public auction; and at that sale the defendant, William H. Cochran, as trustee for Penn Development Company (this appellant), was the highest and successful bidder therefor, and the said property was sold to him for the sum of \$29,345.82. [Record, pages 100-109.] Subsequently on the said 11th day of March, 1914, the said Citizens Trust and Savings Bank executed and delivered unto the said Cochran, as trustee aforesaid, a full, proper and legal deed of conveyance of all of the said property. [Plaintiff's Exhibit C—Record, page 100.] On March 23, 1914, the said Cochran transferred and conveyed the said property to the said Penn Development Company [deed—Defendant's Exhibit 2—Record, page 142]; and the said company ever since then has been, and still is, the sole, lawful owner and holder of the said property. The plaintiff alleges in its seconded amended complaint that it is "*in possession*" of the said property. [Record, page 18.] But it offered not a word of testimony to even endeavor to sustain that allegation. The deliberate falsity of this allegation is also shown by the testimony of Mr. Cochran [Record, page 95], which clearly establishes the continuous and unquestioned possession of this property by the Penn Development Company since the sale thereof on March 11, 1914.

If there were any moneys due under the Dorsey contract, and even assuming, for argument, that they were a lien on the property in question, would not such lien have been subordinate and secondary to the trust deed, inasmuch as the Dorsey contract was not made until several months after that deed? And would not, therefore, such lien have been foreclosed and extinguished by the foreclosure sale of the property under that trust deed? Can it be seriously contended that a foreclosure sale of property under a trust deed, or a mortgage, does not absolutely foreclose and extinguish all subordinate liens thereon, and interests therein?

The Dorsey contract created simply a personal liability, on his part, for default in any of its terms and provisions, which default might be sued on in the proper action, and any unpaid amounts due under that contract, recovered by the plaintiff. But certainly none of such amounts were a lien upon the property, as already shown.

It is conceded that, at the time this trust deed was made, and also at the time of the making of the Dorsey contract, the plaintiff, Ventura-California Oil Company, was the owner and in possession of the property in suit.

Appellant, however, contends that plaintiff was completely foreclosed and divested of such title by the sale of the property under the trust deed, and the conveyance thereof to it.

It is difficult to find any theory, or principle of law, which could possibly support this finding of the decree, that the Penn agreement establishes the deed from Citi-

zens Trust and Savings Bank, which by its unquestioned terms absolutely conveyed the property in suit, in fee simple, to be nothing more than a mortgage on the property. The honorable trial court filed no opinion and that court's line of reasoning and deduction is, therefore, not disclosed. Nor did plaintiff's counsel, on the argument of the case in the court below, present any argument to suggest, let alone support, such a finding as this.

Plaintiff's at one time claim, or theory, of its case, is, however, probably explained by the statement of its attorney, Mr. Odell, who testified [Record, page 61] that "I (the witness) relied on my knowledge of the law, which is that if you take subject to a contract, and the transfer is made subject to that contract, you take subject to that contract." And presumably to support this finding, it is the plaintiff's further theory that the Penn agreement, in some way, shows the appellant's purchase of the property to have been made subject to the Dorsey contract.

IV.

Penn Development Company Acquired and Has a Good, Legal and Indefeasible Title in Fee Simple, to the Property Involved in This Action, and Not Merely a Mortgage Thereon, as Adjudged by the Decree Herein.

The final decree in this action, now appealed from, adjudges that the certain agreement between Pacific Petroleum Company and Penn Development Company, and the certain deed from Citizens Trust and Savings

Bank, trustee, to William H. Cochran, and also the deed from said William H. Cochran, trustee, to said Penn Development Company, "constituted and were and are, in so far as the interests of the Ventura-California Oil Company are concerned in the premises, * * * a mortgage, and as such are subject to and inferior to the title and rights of the plaintiffs herein." [Record, page 39.]

The appellant claims legal title to, and ownership of, the said property, under the last two above mentioned deeds. It also contends that the above mentioned agreement does not detract from nor impair such title.

As has been already discussed, *supra*, and as appellant contends conclusively established, neither Dorsey nor Pacific Petroleum Company ever had any title whatsoever to the property in question. In passing, it may well be noticed that the plaintiff, itself, formally recognizes this to be the fact, by the allegation in its second amended complaint, that it simply "entered into a contract by which the *plaintiff agreed to sell and said Dorsey agreed to buy*" [Record, page 20] the property.

If neither Dorsey nor Pacific Petroleum Company ever had any title to this property, how would it be possible for either, or both of them, by any agreement with a third party, to create any mortgage on the property, as apparently is adjudged by the decree herein was done? Mortgages can legally be made or created only by the owners of property. In this case the owner of the property involved herein, at the times in question, was the plaintiff itself.

On February 17, 1913, Pacific Petroleum Company and Penn Development Company entered into the written agreement in question, and which is in evidence as Plaintiff's Exhibit D, at pages 109 to 121 of the record.

As the provisions of this agreement are separately discussed hereafter in this brief, they may be passed for the moment, with the statement that appellant confidently submits that that agreement contains nothing to support any claim that appellant's purchase of the property was made subject to the Dorsey contract; and further that that agreement expressly, and by its very terms conclusively establishes that, by this purchase of the property, *Penn Development Company* was "to take title to the same in fee simple, absolutely without conditions, or trust relations of any kind whatsoever," excepting the specified condition as to a certain option thereon. [Record, page 111.]

But aside from its particular provisions, its pertinency, materiality, and the agreement as a whole, will be briefly considered.

When this agreement was offered in evidence by the plaintiff, it was objected to as "irrelevant and immaterial" to the issues raised by the pleadings; but such objection was overruled, and an exception taken to that ruling. [Record, page 51.] That the admission in evidence of this agreement was a grievous error, is seriously urged.

The only reference in the second amended complaint to this agreement is in paragraph "IV" of the alleged "Second Cause of action." [Record, page 23.] There this agreement is set forth, and it is alleged to be under

it "by which it (Penn Development Company) obtained some interest in and to the said property."

This allegation of the complaint was specifically denied by Penn Development Company in its answer. [Record, page 28.] And that answer also affirmatively pleaded, as a defense, that that company, for a good and valuable consideration, had purchased and acquired the property referred to on March 11, 1914, that is to say at the trustee's public sale thereof. [Record, page 29.]

As this appellant thus formally disclaimed any claim of title to the property by, through, or under its agreement with Pacific Petroleum Company, that agreement should not have been admitted in evidence, as there was no issue raised by the pleadings to which it was at all pertinent or material. Whatever title or interest Penn Development Company acquired in this property, assuredly was solely through the two above mentioned deeds; and in no possible way through the Penn agreement, as was claimed in the complaint and relied on by plaintiff. The most that can be said as to the materiality of this agreement is that it might show that these deeds were, in fact, intended to be only mortgages. But as no such claim or issue was presented or raised by the pleadings, the agreement was not properly admitted in the attempt to prove any such fact.

Moreover, if, as appellant confidently contends has been conclusively established, Pacific Petroleum Company did not assume the Dorsey contract, it would not be possible for that company to make any agreement,

let alone the one in question, which could, in any way, affect this property or the title thereto.

Plaintiff also apparently abandoned any such claim or theory when it attempted to prove some oral agreement by this appellant that it, Penn Development Company, would carry out the Dorsey contract, meaning thereby, of course, that that company had assumed that contract. Plaintiff then formally abandoned any claim under this alleged oral agreement by its admission that "we are not suing upon this oral contract." [Record, page 61.] And it again shifted its position to the claim that the certain alleged oral conversations operated as an estoppel to this appellant's denying it had assumed the Dorsey contract. These alleged conversations and the so-called estoppel are separately and fully discussed hereafter in this brief.

These several different claims and positions of plaintiff are worthy of comparison.

It first alleged in its second amended complaint that such interest as Penn Development Company obtained in this property was by and through the Penn agreement.

Then it claimed that the Penn Company had orally agreed to assume the Dorsey contract.

And finally it claimed that, while no recovery was asked for on this alleged oral agreement, the Penn Company was estopped by certain alleged conversations from denying its liability for carrying out the Dorsey contract.

These varied claims are certainly sufficiently inconsistent as to raise the fair presumption that plaintiff

was simply on a “fishing excursion” through the facts and the law, in an endeavor to find some claim, theory, or law which would sustain its outrageous and unlawful attempt to deprive appellant of its lawfully and in good faith acquired property.

It is respectfully submitted that plaintiff has not legally established anything which at all impairs the good fee simple title which Penn Development Company acquired to the property in suit; or to sustain the finding in the decree that that company’s interest in the property is only a mortgage.

V.

The Agreement Between Pacific Petroleum Company and Penn Development Company, Dated February 17, 1914, Does Not Alter Nor Modify the Propositions Hereinbefore Contended for by This Appellant or Any of the Rules and Principles of Law Cited in Support Thereof.

It is not necessary to go into any prolonged discussion of the detailed provisions of the agreement between Pacific Petroleum Company and Penn Development Company [Plaintiff’s Exhibit D—Record, page 109], as the agreement must speak for itself; and unquestionably this Honorable Court will give it full and careful consideration.

Plaintiff’s witness, Mr. Odell, was permitted on the trial of this action to give his various theories of and deductions from this agreement. Such testimony was not only objected to, but motions were made to strike it out. These objections were overruled and the

motions denied; and exceptions were taken by appellant to both such rulings. It is submitted that such testimony was improperly and erroneously admitted, and that it should not be considered on this appeal, as the mere opinion of a witness as to the agreement's construction, is certainly most objectionable.

It is, however, desirable to direct this Honorable Court's attention to the general plan, which was not only contemplated, but actually embodied in this agreement.

It must be apparent to even the most casual reader and student of this agreement that it embodies two main and absolutely distinct features. One relating solely and exclusively to the Ventura-California property (the property here in suit) and the other solely and exclusively to the so-called "assets" of Pacific Petroleum Company.

As to this Ventura property, this agreement provides as follows:

"First: The Penn Development Company agrees to purchase at a sum not exceeding thirty thousand dollars (\$30,000.00) at the forthcoming trustee's sale, the title in fee simple of the Ventura-California property, described as follows:

* * * * *

The Penn Development Company is to take title to the same in fee simple, absolutely without conditions or trust relations of any kind whatsoever, except the Penn Development Company shall forthwith enter into an option in the form attached hereto as Exhibit A." [Record, page 111.]

The balance of this agreement is practically entirely devoted to the consideration of the “assets” of Pacific Petroleum Company, a plan for their preservation, for the advancement of certain moneys to carry out such proposed plan, and for the securing and repaying of such moneys as might be thus advanced. It again should be noticed that the purchase of the Ventura property is not in any way included in these provisions of the agreement, and which have been characterized as the “general plan” of the agreement, as distinguished from the distinctly specific and particular provisions relative to the Ventura property.

The reason and necessity for these absolutely distinct provisions as to the Ventura property is clearly pointed out by the testimony of Mr. Cochran, who testified as follows:

“The distinction which was in the minds of my clients is the same that appears in this agreement very clearly. In other words, the situation that was presented to the Penn Development Company—or rather the people who organized it—was, this particular piece of property * * * would be lost unless it was bid in on the 11th of March, by somebody, because the Pacific Petroleum Company didn’t have the money, the Ventura-California Oil Company didn’t have the money, and nobody who was interested in either one of those companies could raise the money to protect it against that sale. The Pacific Petroleum Company, as appears in this agreement, independent of the Ventura-California property, had a number of so-called leaseholds or interests in other properties. * * * Then

naturally the Penn Development Company didn't want to come out here on a wild goose chase, and they felt that if they got one piece of property they would have something to go ahead on, and, therefore, this agreement was made. But by this agreement the Penn Development Company agreed to purchase it, and then, even, fearing that somebody might quibble and say we were doing something for creditors, or somebody else, the distinct provision was put in that the Penn Development Company was to take title to the same in fee simple, absolutely without conditions, or trust relations of any kind whatsoever except the Penn Development Company shall forthwith enter into an option in the form attached hereto as Exhibit A." [Record, pages 90, 91.] This witness further testified that "There was never a suggestion by anybody in the East or in the West that the Penn Development Company was doing other than buying that property absolutely for itself, subject only to the option; and, as I say, Mr. Peters said to me that that is the only thing that disturbed Mr. Odell, and I heard Mr. Peters call Mr. Odell's office and talk to Mr. Odell—at least he said he did—and Mr. Odell was satisfied with the agreement's execution and the option." [Record, page 91.]

The full details of this last mentioned conversation between Cochran and Peters, which stands uncontradicted, is worthy of the fullest and most careful consideration, not only as establishing plaintiff's personal knowledge of the Penn agreement, but also of the particular provisions thereof. This conversation will

be found, fully narrated, at pages 84 and 85 of the Record. It should also be recalled that Peters was the secretary, treasurer and general manager of the plaintiff company [Record, page 54], and also its largest stockholder. [Record, page 141.]

Again, it should be noticed that this agreement in no way shows that Pacific Petroleum Company made any claim of any title to or interest in the Ventura property; nor is that property included in the list of that company's so-called "assets," which are so particularly specified in the agreement.

The only other references in the agreement to the Ventura property are the following:

(a) In the last paragraph of the agreement Pacific Petroleum Company guarantees that a fee simple title to this property may be bought for not exceeding \$30,000 [Record, page 114]; and also guarantees the number, character and condition of the oil wells thereon. [Record, page 115.]

By its expressed terms, these guarantees were made a "part of the essence and consideration of this agreement." Naturally the appellant, which had never seen nor investigated the property which it proposed to buy in for itself, would not have incurred the expense of sending a representative from Philadelphia to California for that purpose, let alone enter into what is practically an entirely independent contract, to advance certain large sums of money to preserve the "assets" of Pacific Petroleum Company, without some assurance and guarantee as to this property, and that it could be bought "in fee simple" for within a certain specified sum.

But these guarantees do not show any title or interest of Pacific Petroleum Company in or to the property. They are nothing more nor less than guarantees of that company as to the conditions under which the property could be bought, no matter who the owner thereof might be, so that the Penn Company might acquire some tangible asset, which would warrant its coming to California, and taking up the entirely independent affairs of the Pacific Petroleum Company.

(b) Paragraph "Sixth" of the agreement provides for what should happen to the above mentioned agreement for the proposed preserving of the Pacific Petroleum Company's assets, in the event that this appellant should be unable to buy in the Ventura property, as was guaranteed to it could be done.

What has just been said, *supra*, as to the guarantees in this agreement, is equally true as to this "Sixth" paragraph thereof.

It is respectfully submitted that this Penn agreement, while but a single instrument, really embodies two separate and distinct matters,—one as to the Ventura property and the other as to the Pacific Petroleum Company assets.

The assertion of plaintiff's attorney and president, when testifying on the trial of this action [Record, page 70], that "This contract must be construed all together," is acquiesced in as a general statement of law. But that general principle of law is not applicable to a contract or agreement which by its very terms covers two separate and distinct features or subject-matters. Provisions which are particularly ap-

plicable to one matter can not be construed as applicable to the other, even although they are all set forth in the same instrument.

Plaintiff contended on the trial of this action that, under its agreement, Penn Development Company had agreed to advance and had simply advanced the money with money with which the Ventura property was bought in by it.

Without going further into the discussion of the provisions of this agreement, this appellant respectfully and particularly directs this Honorable Court's attention to the fact that the provision as to this appellant buying in the Ventura property stands distinctly and completely by itself. And also that when such purchase is completely provided for, the agreement takes up the entirely different and distinct feature of the Pacific Petroleum Company "assets." And it is only as to such assets that "advances" are provided for. There is no suggestion of any other application of the contemplated advances; nor is the Ventura property in any way connected by this agreement with the "advances" proposed to be made. Nor is there any provision for the repayment to this appellant of such moneys as it might pay out in acquiring the Ventura property, excepting in the event that Pacific Petroleum Company should exercise the option to purchase the property, which option was given to it by the Penn agreement.

VI.

The Testimony of Alleged Conversations Between Plaintiff's President and Appellant's Attorney Was Objectionable and Was Improperly and Erroneously Admitted in Evidence.

Against the objections of the defendant Penn Development Company, plaintiff's president, Mr. Odell, was permitted to testify about certain conversations he claims to have had with one of that company's attorneys, Mr. Cochran, prior to the foreclosure sale of the property involved herein, on March 11, 1914.

The plaintiff's perfectly evident purpose in trying to prove these conversations was to establish some liability of Penn Development Company for the carrying out of the Dorsey contract [Plaintiff's Exhibit A].

Mr. Odell testified that Mr. Cochran, on their first meeting each other, said to him that "it (Penn Development Company) would see that the contract between us (plaintiff company) and Dorsey and the Pacific Petroleum Company would be carried out" [Record, page 52]; and that practically the same statement was again made to him by Mr. Cochran at the bank on the day of the sale of the property. [Record, page 60.]

It should be observed that the second amended complaint, on which the trial of this action was had, does not plead nor in fact make any reference to this alleged oral contract thus attempted to be proved by the plaintiff; nor is there even a suggestion of a claim or demand in that complaint that this appellant is in any way liable for the performance of the Dorsey

contract, Plaintiff's Exhibit A. As has been shown and discussed, *supra*, the only claim of the complaint is that, under the Pacific Petroleum-Penn agreement of February 17, 1914, the Penn Company "obtained some interest in and to the said property * * * but such interest, if any it has, was taken subject to and with full knowledge of all the right, title and interest of the plaintiff" [Record, page 23]. As also already said, such alleged claim of title was formally disavowed by appellant in its answer herein.

As these alleged conversations, even if had, did not in any way bear on and were not pertinent to this sole claim of the complaint—but as to which claim there is really no issue involved under the pleadings—the testimony about them was certainly irrelevant and immaterial, and should not have been admitted.

Mr. Odell having testified that "prior to the purchase of the property by Mr. Cochran as trustee of the Penn Development Company, I had a conversation with him in regard to the property" [Record, page 50], (which testimony was objected to by this appellant, the objection being overruled, and exception thereto taken [Record, page 51]), he was asked by plaintiff's counsel, "Now, I am asking you about the conversation you had with Mr. Cochran?" To this question appellant made its objection, was overruled, and exception taken [Record, pages 51-52]. In answer to this question the witness narrated the conversations now under consideration.

Appellant immediately moved to strike out the testimony "as wholly incompetent, irrelevant and imma-

terial." The motion was denied, and exception taken to the ruling [Record, page 53].

On the completion of this witness's testimony the motion to strike out was renewed on the same grounds, and also as further objectionable under the Statute of Frauds, in that it was an attempt, by an alleged oral promise, to make this appellant liable for the indebtedness of a third person, to-wit: any possible indebtedness under the Dorsey contract, which liability, by this statute, could be created only by a written instrument. [Record, pages 75 to 77.]

This later motion was also overruled, and exception taken to such denial, the honorable trial court saying that, "I think you waived the Statute of Frauds in permitting the witness to testify without making an objection at the time, without either pleading it or making an objection." [Record, page 77.] And also holding that this testimony was "entirely relevant even if the Statute of Frauds disbar it. It is good for the purpose of showing knowledge, if nothing else." [Record, page 77.]

As to the Honorable Court's suggestion that this appellant should have pleaded this statute in its answer, it is sufficient to say that there is no allegation in the complaint which even suggests the necessity of such a plea, nor against which this statute could have been interposed.

It is also difficult to see the propriety, legal necessity, or admissibility of this testimony to show that appellant had knowledge of the Dorsey contract, as the court held, inasmuch as that contract was duly recorded

and knowledge thereof was therefore legally imposed on all persons.

Appellant also contends that its plea of the Statute of Frauds was timely made.

It should be noticed that there was nothing in the general question, in response to which this testimony was given, that would even suggest the character of the answer thereto, let alone warrant interposing this statute as a ground of objection. It also should again be noticed that objection was made to this question when asked, and that such objection was overruled.

It was only when this testimony was completed that its objectionable character under this statute appeared. And immediately, then, the overruled motions to strike out were made.

This later contention is sustained by the decision of the New York Court of Appeals in

Holcombe v. Munson, 103 N. Y. 682, 9 N. E. 443,

where it was held that "When parol testimony is offered to show the amount of charcoal a purchaser was to take under a written contract of sale, it cannot be objected to on the ground that it operates to show a parol contract for the sale of personal property amounting to more than \$50.00 in value, and void under the Statute of Frauds, *until the evidence discloses the fact that it is objectionable on that ground.*"

But aside from all decisions, and viewing the proposition from a practical, legal and equitable standpoint, how would it be possible to plead the Statute of Frauds

before the objectional character of the testimony actually appeared in the testimony itself, when the question in response to which the testimony was given presented not even a suggestion of any objectionable answer other than what certainly was covered by the objection interposed by the appellant in this particular instance?

But, moreover, the testimony of Mr. Cochran as to these conversations differs materially from that given by Mr. Odell. Mr. Cochran testified as follows: That when he first met Mr. Odell the latter "stated something to the effect that the Ventura-California Oil Company * * * had this money which they stood to lose, and they didn't know what they were going to do, or anything else. * * * I told Mr. Odell generally what our plans were, but in no way—and my memory is positive about it—did I refer to the Ventura-California agreement. Any reference to that was made by himself, and himself alone, and any remarks which I made about the general plans were confined to that, and I did not refer to the Ventura-California contract or agreement in any shape, form or manner. I simply referred to the general plans of the Penn Development Company." And this he again in detail and emphatically later repeats [Record, page 82]. As to the conversation at the bank on the day of the sale of the property, Mr. Cochran testifies that he asked Peters if he was going to bid on the property, and that Peters said "no." That he, Cochran, then went to Mr. Odell and called his attention to the fact that the notice of sale was being read, and that Odell said "I have no

interest in it, or some such expression.” [Record, page 85.] And he also positively denies that at this time he told Mr. Odell that “We are going to carry that out,” referring to the Ventura-California agreement, and also testifies that “I never said that in the bank, or in any other place, nor at any other time, nor to any other person, and I had no authority to do so in the slightest particular. My authority was limited to this contract.” [Record, pages 86, 87.] On cross-examination Mr. Cochran testifies that “Mr. Dorsey did not say in my (Cochran’s) presence that the contract would be taken care of and fully carried out; * * * I don’t think Mr. Dorsey told you any more than what I have said was said at that time, and that was that if the general plan of the Penn Development Company went through and they did subsequently attempt to finance the Pacific Petroleum Company by making these advances, which do not include the Ventura-California Oil Company, then you people would be taken care of properly.” [Record, page 93.] * * * “These general plans of which I have spoken were independent of the Ventura, as shown in this agreement.” [Record, page 94.]

It is much to be regretted that this seeming conflict should exist in the testimony of the attorneys for the respective parties involved in the discussion. Such conflict is not, however, irreconcilable, nor beyond satisfactory explanation.

As appears in his testimony, Mr. Cochran never was a stockholder of Penn Development Company [Record, page 92], but “came out here (from New York to

California) simply as attorney-at-law to examine different titles and see that this sale was properly conducted, and any other matters we took over, that the titles were properly searched." [Record, page 87.] He, therefore, had no personal interest whatsoever in the matters involved in this action; his interest therein being purely professional in the capacity of attorney-at-law for his client, Penn Development Company.

On the contrary, Mr. Odell was not only the attorney for Ventura-California Oil Company, the plaintiff herein, but was also personally interested in the company to the extent of 84,976 shares thereof [Record, page 141], out of a total authorized capitalization of 500,000 shares. [Record, page 140.] The amount of stock actually issued does not appear in the record. Mr. Odell was also a director and the president of the company, and is one of the plaintiff-trustees because of the company's dissolution.

Mr. Odell also repeatedly, in his testimony, largely confirms Mr. Cochran's version of these conversations. He testifies [Record, page 55] that Cochran said that "*He would take care of the Ventura-California Oil Company; that his people would see that it got what was coming to it.*" And again [Record, page 60], in testifying about the alleged conversation at the bank: "*Mr. Cochran assured us again that the Ventura would be taken care of.*" And again [Record, page 64], Mr. Cochran "*stated that he had an arrangement by which the Ventura-California Oil Company would be taken care of.*"

All this testimony conforms exactly with what Mr. Cochran testifies he said would be done—that is, that if the general plans went through “*all creditors*,” including the plaintiff, “would be taken care of.” [Record, page 94.]

Is it not probable that this witness, Mr. Odell, even unwittingly and in the best of good faith, has drawn and stated his own narrow and biased conclusions as to how his company was to be “taken care of,” when he testifies that it was to be done by the Penn Company assuming the obligations of the Dorsey contract?

The very improbability of such an undertaking is also an important factor in the weighing of this testimony. It might well be that a person, on some reliable general information, such as was guaranteed to it in the Penn agreement, would be willing to take over a piece of property at the cost of an existing mortgage thereon, in this particular instance approximately \$30,000. But it is incredible to believe that any sane business man would obligate himself to a further approximate amount of \$50,000 or even take over the property subject to such an encumbrance, without having first seen and thoroughly examined into the property's real value and possibilities.

But again, as has been discussed, *supra*, any default in the Dorsey contract was purely and solely the personal liability of Dorsey, which might be collected from him in a proper action on the contract, therefor; but was in no way a lien or mortgage on the property here involved. Even, therefore, if this appellant was bound by the alleged oral contract to perform the Dorsey con-

tract, no recovery therefor could be had in this action as presented by the second amended complaint, but only in an action on the contract itself, as would have had to be done if recovery had been sought from Dorsey himself.

It is again submitted that the testimony as to these conversations should have been stricken out as being an attempt against the statute of frauds, to make the Penn Company liable, under an alleged oral promise, for the Dorsey indebtedness, if any such indebtedness ever existed.

It may also be fairly and properly contended that plaintiff has formally waived any possible claim for recovery under this alleged oral promise by the sworn statement of Mr. Odell, the plaintiff's attorney, president, and one of its substituted trustees, that "We (the plaintiffs) are not suing upon this oral contract." [Record, page 61.]

VII.

Penn Development Company Is Not Estopped From Denying Any Liability Under the Dorsey Contract.

As already shown, plaintiff formally disavowed any possible claim of liability of Penn Development Company under the Dorsey contract, through any oral promise relative thereto, which plaintiff attempted to prove, and establish. This was done, by the sworn statement of plaintiff's president, Mr. Odell, that "We are not suing upon this oral contract" [Record, page 61]; and has been discussed, *supra*.

Plaintiff, however, on the trial of this action, made some contention that, by certain alleged conversations between plaintiff's president, Mr. Odell, and the Penn Development Company's attorney, Mr. Cochran, the Penn Company was estopped from denying that, under the Pacific Petroleum Company-Penn Development Company agreement, it was not liable for, and bound to carry out the Dorsey contract.

If there be any such estoppel, it certainly must be what is commonly known as an "estoppel *in pais*," or "equitable estoppel."

The fundamental elements which are absolutely essential to create, and also to legally establish, an estoppel of this character, are of such long standing, and so generally well recognized, as, in appellant's judgment, makes it necessary to refer particularly only to those which must be considered in the light of the facts and the testimony in this particular case. To these appellant respectfully directs this Honorable Court's attention and consideration.

A.

TO BE EFFECTIVE, THE ESTOPPEL CLAIMED BY THE
PLAINTIFF ON THE TRIAL OF THIS ACTION
SHOULD HAVE BEEN PLEADED IN ITS COMPLAINT.

Before proceeding with any discussion of the testimony on which plaintiff relies to establish its claimed estoppel, appellant submits that such estoppel, even if it existed, could not be proved nor established on the

trial, as it was not pleaded in the second amended complaint, on which the trial of this action was had.

Newhall v. Hatch, 134 Cal. 249, 66 Pac. 266;

Chapman v. Hughes, 134 Cal. 441, 66 Pac. 982.

In the former case it was held that

“If the appellant had intended to claim that the plaintiff was estopped from asserting the lien of his mortgage against the rights of the appellant, *by reason of any conduct, or representation in reference thereto, this defense should have been specially pleaded.* The proceedings in the former suit were set forth at length and the judgment therein properly pleaded as a bar to the present right of recovery; but *the defense of an estoppel in pais is distinct from that of an estoppel by record, and the facts constituting such defense are new matter, which must be specially pleaded.* Davis v. Davis, 26 Cal. 23; Etcheborne v. Auzeraix, 45 Cal. 121.”

On this point, Chapman v. Hughes, after presenting what was first claimed on the trial of the action constituted an estoppel, says:

“If this should be proven and found to be true, doubtless an estoppel *in pais* would be raised against plaintiff and he would not be heard to disavow the act to which previously he had formerly assented, the parties having changed their condition upon the assurance of his consent.” And the court then holds, “*But the answer to this is that such an estoppel should have been pleaded, proved and found.*”

In the case under review on this appeal, plaintiff did not plead its now claimed estoppel. All testimony relative thereto was, therefore, improperly admitted on the trial.

Nor is there anything in this case which would have prevented plaintiff from formally making such plea of estoppel in its complaint, rather than leaving it to be unexpectedly sprung and claimed on the trial.

The claimed estoppel is based on certain alleged conversations in which plaintiff's president participated; and it was by him that the complaint herein was prepared and verified; and he also was the only witness for plaintiff in support of said conversations. It was all, therefore, directly within plaintiff's personal knowledge, at the time it instituted this action, and made its second amended complaint. The claimed estoppel, therefore, could have been pleaded. The failure to do so precluded any attempt to establish it on the trial.

The conversations relied on have been already fully discussed. It is therefore sufficient, for the moment, to say that the introduction of this testimony about these conversations was not only objected to by this appellant, but that appellant also formally moved to strike out all such testimony when it was completed. To the respective overruling of such objection, and the denial of such motion, appellant duly excepted.

B.

THE BURDEN OF PROVING AND ESTABLISHING THE CLAIMED ESTOPPEL LIES ON THE PLAINTIFF.

Under the well established rule that he has the burden of proof who has the affirmative of an issue, it

cannot seriously be questioned but that, in this case, the burden is on the plaintiff not only to clearly and satisfactorily prove the estoppel claimed, but also to likewise prove all the facts necessary to establish it.

C.

AS PLAINTIFF HAD NOT ONLY THE MEANS OF KNOWLEDGE, BUT ALSO THE ACTUAL KNOWLEDGE OF THE REAL FACTS, THERE CANNOT BE ANY ESTOPPEL.

This principle of the law of estoppel is enunciated in Bigelow on Estoppel (4th Edit.), page 608, as follows:

"The person who claims the benefit of this estoppel *must show that he was ignorant of the truth* in regard to the representation, and *that he was permissibly ignorant thereof.* * * * *If he knew, or under all the circumstances ought to have known, the facts, the estoppel, even if the representation was made on oath, falls to the ground.*"

And again, in Cyc. of Law and Procedure, Vol. 16, page 726 (and cases cited), the law is summarily stated to be that:

"In order to constitute an equitable estoppel * * * the party to whom it (the alleged false representation) was made *must have been without knowledge, or the means of knowledge of the real facts.*"

To the same effect is Biddle Boggs v. Merced M. Co., 14 Cal. 279, in which the essential elements which must be proved to establish the estoppel are particularly set

forth, one of such elements being (page 368) “that the other party *was not only destitute of all knowledge of the true state of the title, but of the means of acquiring such knowledge.*”

In the case at bar, plaintiff contends that certain alleged oral statements of the Penn Development Company’s attorney, made in the course of his above mentioned conversations with the plaintiff’s president, estops the Penn Company from denying that the Dorsey contract was not within the purview of the Penn agreement of February 17, 1914 [Plaintiff’s Exhibit D, Record, page 109]; and that it did not, by such agreement, obligate itself to the performance of the Dorsey contract.

As to this contention, appellant submits that not only were the means readily open to plaintiff to acquire full and exact information and knowledge of the Penn agreement, but, further, that the record in this case clearly establishes the fact to be that the plaintiff not only actually had such personal knowledge, but also had a copy of the agreement in question.

It may be, as Mr. Odell testifies, that he personally did not see a copy of this agreement “until after this suit was instituted.” [Record, page 63.] But that the plaintiff itself had personally actual knowledge of the terms and provisions of this agreement, as well as a copy thereof, prior to the sale of the property, is established by the uncontradicted testimony of Mr. Cochran that he saw “Peters two or three times between the time of my (his) arrival and the sale. Peters had a copy of this agreement in his possession, discussed it,

and, as I say, was blaming Dorsey, even telling me that he was going to have the agreement, if possible, set aside, because he thought this option was for too long a period." [Record, page 83.] And that Peters, on the day before the sale, called to see and examine the original instrument, to satisfy Mr. Odell that it was "in proper form as to execution, and particularly as to the option"; and that upon such original being handed to him, "he (Peters) took a look at it and read over the execution and then also read over the option." [Record, page 84.] The full testimony on this point, which will be found at pages 83 to 85 of the Record, deserves more attention than has been given in these brief extracts. It also should be recalled that Peters was the largest stockholder of the plaintiff company [Record, page 141], its active manager, and also its secretary and treasurer. [Record, page 54.]

D.

AN ESTOPPEL CAN BE RAISED ONLY WHEN THERE
IS CERTAINTY TO EVERY INTENT.

"Before an estoppel can be raised there must be certainty to every intent, and the facts alleged to constitute it are not to be taken by argument or inference."

Cyc. of Law and Procedure, Vol. 16, page 748,
and cases cited.

"The representation, to justify a prudent man in acting upon it, must be plain, not doubtful or matter of questionable inference. *Certainty* is essential to all estoppels."

Bigelow on Estoppel (4th Edit.), page 559.

“Every estoppel, because it concludeth a man to allege the truth, must be certain to every intent, and not to be taken by argument or inference.”

Coke Litt. 3529, quoted approvingly in *Vanbibber v. Beirne*, 6 W. Va. 168, 178.

“If an act or admission is susceptible of two constructions, one of which is consistent with a right asserted by the party sought to be estopped, it forms no estoppel.”

Ware v. Cowles, 24 Ala. 446, 60 Am. Dec. 482.

In *Brigham Young Trust Co. v. Wagner*, 40 Pac. 764, the rule of what must necessarily be proved to create an estoppel of this character is thus stated:

The party against whom the estoppel is claimed should have

“First, falsely represented or concealed a material fact; second, the false representation or concealment must have been knowingly made; third, the party pleading the estoppel must have been ignorant of the facts; fourth, the representation must have been made with the intention that it should be acted upon; fifth, the party pleading it must have been misled thereby, to his injury in some substantial particular.”

The conversations in which this alleged representation was made have been already discussed, *supra*, and it is, therefore, unnecessary to again go into them. The testimony of the respective participants in these conversations (Mr. Odell and Mr. Cochran) is in perfect accord to the extent that Mr. Cochran stated

that the plaintiff "*would be taken care of.*" It is in conflict, however, as to the further parts of these conversations, as to how, or under what conditions, this "taken care of" was to be done. Mr. Odell testified that Mr. Cochran stated that the Penn Company "*would see that the contract * * * would be carried out.*" [Record, page 52.] He, however, later modifies this, by his testimony that Mr. Cochran stated "that his people *would see that it (plaintiff) got what was coming to it.*" [Record, page 56.] These alleged statements are positively denied by Mr. Cochran, who also testified that he stated only "that *if the general plan of the Penn Company went through * * * then you people (plaintiff) would be taken care of properly.*" [Record, page 93.] And that this would have been equally true as to "all creditors" of Pacific Petroleum Company. [Record, page 94.] This proposed "general plan" has been already presented and discussed. It also is worthy of note that there was no attempt to directly contradict nor deny this testimony of Mr. Cochran, and also that at its conclusion plaintiff's counsel laid so much stress on Mr. Cochran's testimony that he had said to Mr. Odell that the plaintiff "would be taken care of." [Record, page 94.]

Moreover, there is nothing in the testimony to associate, or connect the Penn agreement with these alleged representations, even if they had been made. At the best, they were but oral promises, which, as already shown, were invalid, and unenforceable, even if proved. Nor could this alleged oral contract be made binding through any estoppel. This was decided in

Brightman v. Hicks, 108 Mass. 246,
the court holding that

“A promise within the statute of frauds could not be made binding by way of estoppel, though it had been acted upon.”

The alleged representations do not appear to have reference “to a present, or past state of things,” but are rather “a mere statement of intention or opinion,” and consequently could not tend to establish any estoppel.

Bigelow on Estoppel (4th Ed.), page 555;

Cyc. of Law and Procedure, Vol. 16, page 752.

E.

Nor was plaintiff justified in relying on these representations, even if made. It is well settled that, to create an estoppel, the representation must be such as “to justify a prudent man in acting upon it.”

In this instance, the representations were alleged to have been made to plaintiff's president, who is also an attorney-at-law, with some twenty-eight years of practice. And yet he testifies that he made positively no inquiries about the Penn agreement, on which plaintiff now so strenuously relies. This witness testified [Record, page 62] as follows:

“I can't say that I knew that there was some written agreement between the Pacific Petroleum Company and the Penn Development Company, *but I suspected there was; I didn't inquire as to the terms, it was none of my business what your relations were.*”

And that, too, in the face of the fact that he claims that this agreement bore on his company's property.

Probably the true explanation of plaintiff's position is found in the fact that it relied rather on Dorsey to carry through what it now claims the Penn Company agreed to do. It apparently accepted as a fact Dorsey's statement "that he had made an arrangement with the Penn Development Company by which that (the Dorsey contract) would be taken care of." [Record, page 52.] Mr. Odell testified that "*We (plaintiff) relied upon Senator Dorsey, who we thought was reliable, and upon what Mr. Cochran said.*" [Record, page 53.] And again [Record, page 60]: "*I relied very much on Mr. Dorsey.*"

Nor has plaintiff shown that it suffered any substantial loss, as it must do to create the claimed estoppel.

Cyc. of Law and Procedure, Vol. 16, page 745, states the law to be that:

"In order to create an estoppel *in pais*, the party pleading it must have been misled to his injury, that is, he must have suffered a loss of a substantial character or have been induced to alter his position for the worse in some material respect."

Plaintiff's sole claim, which might even tend to bring this case within the rule of law just cited, appears in the testimony of Mr. Odell [Record, pages 52-53] that, relying upon Mr. Cochran's alleged statements, "We (plaintiff) ceased further prosecution of this loan and didn't endeavor to pay up because we understood that

the Penn Development Company would take care of it, being a stronger corporation.”

It appears that the plaintiff had been endeavoring to procure a loan on the property in suit, so as to take up its indebtedness to Citizens Trust & Savings Bank. It is to the endeavors to procure such a loan, this last testimony refers.

That such a claim is without any merit, at least to prove any loss, or damage to plaintiff, is clearly established by the record.

From the time this indebtedness to the bank was called on August 10th, 1913, not only plaintiff, but practically every one interested in it, and also Dorsey himself, had unsuccessfully tried to obtain a new loan on the property. Is it, therefore, probable, let alone possible, that such a loan could have been procured within the few days intervening between the day of the alleged representations, which Mr. Cochran fixes as not earlier than March 3, 1914 [Record, page 81], and the sale of this property on March 11, 1914? On this point Mr. Odell, on cross-examination, testified [Record, page 59]:

“Q. Well, didn’t you know that between the time you saw Mr. Cochran and the day of the sale you could not have raised a dollar of that, or the Ventura-California Oil Company either? A. *I know nothing about it.*”

This answer certainly shows that plaintiff had no hope nor expectation that the required money could be raised in time, even if it had not discontinued its efforts, as claimed; although appellant also submits that

the record fairly shows that Peters was even then still continuing his efforts to procure the loan. [Record, pages 83, 84.]

The general question of estoppel, and its absolutely essential elements, are most fully discussed in

Biddle Boggs v. Merced M. Co., 14 Cal. 279, where the court, at page 368, says:

“These qualifications in the application of the doctrine will be found fully sustained by the authorities. There must be some degree of turpitude in the conduct of a party before a court of equity will estop him from the assertion of his title—the effect of the estoppel being to forfeit his property and transfer its enjoyment to another. ‘In all this class of cases,’ says Story, speaking of equitable estoppels, ‘the doctrine proceeds upon the ground of constructive fraud, or of gross negligence, which, in effect, implies fraud. And, therefore, where the circumstances of the case repel any such inference, although there may be some degree of negligence, yet courts of equity will not grant relief. It has accordingly been laid down by a very learned judge that the cases on this subject go to this result only, that there must be positive fraud, or concealment, or negligence, so gross as to amount to constructive fraud.’ (1 Story’s Equity, Sec. 391.)”

It is also submitted that a corporation cannot be estopped by such representations as are relied on in this case.

It is respectfully submitted that plaintiff has totally failed to legally either prove or establish the claimed estoppel.

VIII.

In concluding its argument of this appeal, appellant would not only again direct attention to the many varied and inconsistent allegations, claims and theories advanced by the plaintiff to recover some kind of a decree in this action, but also to the uncertain character of the action, as tried.

The second amended complaint is entitled "*To Quiet Title, and Foreclose Contract.*" [Record, page 18.]

The first alleged cause of action apparently relates to the quieting of title, and the second alleged cause of action to the foreclosure.

While, as appellant has already shown, Dorsey acquired no legal title to the property in question, it must, however, be conceded that Dorsey acquired certain rights under his contract with the plaintiff company; and that, as said contract was recorded, there was some record cloud on plaintiff's title to the property. It may also be further conceded that Dorsey, by his contract, obtained some equitable lien on the property, and that without his formal assent thereto, such a cloud and lien could be removed only by a judgment in an action to foreclose the contract. This later is no doubt all that plaintiff contemplated, and certainly all that it demanded in its complaint. [See prayer for judgment—Record, page 24.]

The Dorsey contract provided for two separate and different remedies in the event of his failure to carry out its provisions. One is a proper action "to collect the value" of any of the unpaid items specified in that

contract; and the other is an action "to foreclose this contract." [Record, page 14.]

The record shows that, while plaintiff was always talking about "foreclosing the contract," it was in reality trying to prove Dorsey's or Pacific Petroleum Company's personal liability for the moneys found to be unpaid. And this is positively established by the decree herein, which finds not only that Pacific Petroleum Company "*is personally liable for the debt,*" but also that the amount of any deficiency on the ordered sale of the property shall be reported, and the said company "*shall pay to the plaintiff the amount of such deficiency.*" [Record, page 45.]

Plaintiff was thus permitted to completely change the character and nature of its action, and the issues as framed by the pleadings. All this was greatly to the prejudice and damage of this appellant, for if the action had been tried and determined solely on the complaint on which it was brought—to-wit, to foreclose the Dorsey contract—appellant submits that the judgment herein must have been in its favor because

(1) The Dorsey contract was not a lien on the property, at least in favor of the plaintiff.

(2) Even if it ever had been a lien, such a lien was extinguished by the sale of the property under the trust deed; and

(3) Penn Development Company had not assumed the Dorsey contract, nor in any way agreed to take the property subject to it. If it had assumed that contract, then the judgment for the indebtedness would have been against that company, instead of against Pacific

Petroleum Company. Nor, in fact, does the Penn agreement in the slightest particular refer to the Dorsey contract.

IX.

The Decree Herein Appealed From Should Be Reversed, and Judgment Entered That the Penn Development Company Has a Good and Legal Title, in Fee Simple, to the Property Involved in This Action.

All of which is respectfully submitted.

THEODORE MARTIN,
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WM. H. COCHRAN,
Of Counsel.

United States
Circuit Court of Appeals, ³
FOR THE NINTH CIRCUTT.

Penn Development Company, a Corpo-
ration,

Appellant,

vs.

C. E. Stoner, et al.,

Appellees.

108107

BRIEF FOR APPELLEES.

TANNER, ODELL & TAFT,
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BRIEF FOR APPELLEES.

Objections to Consideration of Evidence.

At the beginning we call attention of the court to our objection to the settlement of the bill of exceptions, and move for a dismissal of the appeal for the reasons stated on page 98 of the transcript, to-wit:

"Plaintiffs and respondents object to a settlement of a statement of the evidence on appeal on account of delay and lack of jurisdiction now to settle the same. The appeal was taken on the last day of time in which it could be taken, to-wit, January 31, 1917, and more

than eight months had elapsed since that time without a settlement of the statement of the evidence. No notice of any enlargement of time has ever been given to plaintiffs and respondents, and a term of the Circuit Court of Appeals has been held since the appeal was taken.”

No bond staying execution was given, a commissioner has sold the property under the decree, and other rights have intervened. The order made by the district judge did not overrule this objection. [Tr. p. 99.]

STATEMENT OF THE CASE.

We do not fully agree with appellant's statement of the facts.

This is not an unusual case, and the principles upon which the decree was entered are primary and well settled. Briefly stated, the Ventura-California Oil Company, a corporation, whose successors in interest respondents or appellees are as trustees, owned several parcels of oil land in Ventura county, California, on which was a producing well and certain personal property used in connection therewith. A speculator named Dorsey, designing to organize a large corporation, obtained among other properties a contract of purchase upon this property. The agreement [Exhibit A, Tr. p. 11 *et seq.*] provided that Dorsey should purchase the property for \$175,000, to be paid in 11,000 shares of Pacific Petroleum Company valued at \$110,000, \$25,000 par value first mortgage bonds of Pacific Petroleum Company, \$15,000 in cash, and by assuming and paying an indebtedness secured by trust deed against

said property to the Citizens Trust & Savings Bank in the sum of \$25,000 and interest. By this agreement Dorsey became the principal so far as the incumbrance to the Citizens Trust & Savings Bank was concerned. By a written assignment [Exhibit B, Tr. p. 15 *et seq.*] Dorsey assigned this agreement to the Pacific Petroleum Company, and in the assignment accepted by it, as shown by the evidence, Pacific Petroleum Company assumed and agreed to pay the amounts due or to become due under the agreement, including the indebtedness to the Citizens Trust & Savings Bank. It then became the principal and Dorsey and the Ventura-California Oil Company the sureties, so far as their relations were concerned, in the order named, according to the laws of California.

Dorsey as the organizer of the Pacific Petroleum Company began proceedings for a bond issue, and in order to place the bond issue went east to negotiate with certain financiers in Philadelphia. Meanwhile he issued certain receipts which he called "interim bonds," but which were not bonds and had no value whatever other than a receipt stating that the same would be followed by the bonds when issued. No legal proceedings were ever taken to issue the bonds, and Dorsey was unsuccessful in floating them and they never were issued, but the financiers suggested that a new company be formed to be known as the Penn Development Company, which would advance enough money to take care of the various contracts and debts of the properties which Pacific Petroleum Company had agreed to purchase from various persons, including the Ventura

Company. It was evidently the design, as the evidence showed, on the part of Dorsey and the Pacific Petroleum Company to let the interest go unpaid on the Citizens Savings Bank trust deed and thus to cause a foreclosure and a sale direct to the Penn Development Company or to Mr. Cochran as trustee for it, in order that it might escape the complications mentioned by Mr. Cochran at page 82 of the transcript, which complications included the issuance of the bonds and of the stock of the Pacific Petroleum Company as part payment of the purchase price mentioned in the contract made with Dorsey, and also other complication of indebtednesses on some other properties which do not need to be mentioned here. When Cochran arrived in Los Angeles neither he nor Dorsey informed any officers of the company of all of the terms of the secret agreement made, but assured Mr. Odell, president of the company, and Mr. Peters, secretary, that the proposed Penn Development Company had arranged and agreed with Pacific Petroleum Company to take care of and assume and pay the debt to the Citizens Savings Bank, and to fulfill the terms of Dorsey's contract with the Ventura-California Oil Company. Relying upon the statements of Mr. Dorsey and Mr. Cochran that Ventura-California Oil Company's contract would be taken care of and had been taken care of in their agreements, the officers of the Ventura-California Oil Company ceased efforts to obtain a loan to pay off the indebtedness of the Citizens Trust & Savings Bank, and consented that the sale might go forward, but within a few days after the sale they discovered the terms of the

secret agreement between Pacific Petroleum Company and Penn Development Company and found that their contract rights were placed in jeopardy thereby. After demand made this suit was brought.

The cause was tried before the Hon. Judge Trippet and in deciding the case in favor of the plaintiffs he gave an oral decision, which we quote as follows, not in his exact words but substantially as taken down in notes made at the time:

“In this case the plaintiff owning certain lands in Ventura county, executed a trust deed to the Citizens Trust & Savings Bank to secure an indebtedness of \$25,000. This trust deed authorized the trustee to sell the property on default and pay the debt. Thereafter the plaintiff made a contract with Stephen W. Dorsey by which Dorsey agreed to pay certain sums of money and pay the indebtedness for which the trust deed was given. Thereafter Dorsey assigned said agreement to Pacific Petroleum Company, which assumed this obligation and agreed to pay the money Dorsey had promised to pay. Among the things Dorsey agreed to do, as aforesaid, he was to pay the amount secured by this trust deed. The Pacific Petroleum Company entered into an agreement with the co-defendant, the Penn Development Company. Plaintiff complains that this agreement between the Pacific Petroleum Company and the Penn Development Company is nothing else than a mortgage, that is to say, the terms and conditions of the contract between these parties should in equity be construed as simply a mortgage upon the interests of the Pacific Petroleum Com-

pany. The plaintiff claims that, said agreement being a mortgage, plaintiff's rights in the premises are superior to it, that is to say, the plaintiff claims that the sale hereafter referred to, while it did pass the legal title, did not pass the equitable or fee title to the Penn Development Company, and that the Penn Development Company simply holds the legal title of the property as security for the payment of the money advanced by the Penn Development Company. The interest on the amount secured by the trust deed was not paid, and the trust deed was foreclosed and the property sold under its terms, and the purchase by the Penn Development Company was made after the execution of the agreement between the Penn Development Company and the Pacific Petroleum Company. Before consideration of the agreement between the Penn Development Company and the Pacific Petroleum Company and the argument that it is in effect a mortgage, it is appropriate to refer to the oral testimony in the case.

"Mr. Odell, the president of the plaintiff, testified that the defendant stated to him that the Penn Development Company would take care of and protect the rights of the plaintiff to the property involved in the suit. His testimony being in substance that Mr. Dorsey and Mr. Cochran were in his office when this matter was taken up, and he was led to believe that the Penn Development Company was going to pay this debt, but that they wanted the property sold at trustee's sale in order that the title that the trustee had would be in the Penn Development Company as security. This is not exactly the testimony of Mr. Odell,

but that is the theory upon which he desires his testimony to be regarded.

“Mr. Cochran flatly contradicted the statements of Mr. Odell in this regard, and testified that shortly before the sale Mr. Peters, another officer of the plaintiff and one who probably has more to do with and for the plaintiff than Mr. Odell, came to Dorsey’s office and there inquired into the legality of the contract between the Penn Development Company and the Pacific Petroleum Company. There is no conflict as to the evidence that Mr. Peters did inquire into the legality and binding effect of the contract. The fact that Mr. Peters inquired into the validity of the execution of the contract between the Penn Development Company and the Pacific Petroleum Company is very material for the purpose of determining the conflicting testimony before referred to. Unless the plaintiff expected to secure benefit in some way through this contract, there would be no purpose at all in Mr. Peters examining into the execution of it.

“This contract corroborates the testimony of Mr. Odell that he was given to understand that the Penn Development Company was going to take care of the indebtedness, and convinces me that the testimony of Mr. Odell was correct.

“I have not investigated the question as to whether or not this testimony falls within the rule of the original promise upon a present consideration. It may be that the testimony is admissible upon that ground. I have not examined that question because no objection was made upon the ground that it was contrary to the statute of fraud at the time the testimony was given.

“But the evidence is relevant and material. Oral testimony is always admissible for the purpose of showing that a deed is a mortgage and this testimony is relevant and material for the purpose of showing that this whole transaction resulted simply in arranging a security for a debt and therefore it was an equitable mortgage.

“The agreement provides for the purchase by the Penn Development Company of the property in question at trustee’s sale to be made to enforce the trust deed above referred to, and then provides as follows:

“‘The Penn Development Company is to take title to the same in fee simple absolutely without conditions or trust relations of any kind whatsoever, except the Penn Development Company shall forthwith enter into an option in the form attached hereto as Exhibit A.’

“There is another provision in the agreement, which is as follows:

“‘The Penn Development Company agrees to purchase at a sum not exceeding thirty thousand dollars at the forthcoming trustee’s sale, the title in fee simple of the Ventura-California property, described as follows:’ etc.

“Pursuant to this agreement the Penn Development Company did on March 11, 1914, buy this property at trustee’s sale made under the trust deed first above mentioned, and took a deed absolute in form through its agent, the said Mr. Cochran, who transferred the property to Penn Development Company. It is well settled that if a deed is made to secure an indebtedness, regardless of the terms in which the instrument is

written, it may be shown that the language as above quoted is considered as inserted by the parties and as an interpretation of the agreement, or the rule that is so well established by decision and by the code that a deed may be shown to be a mortgage notwithstanding its terms, would be abolished.

“The agreement in this case took the form of two agreements, one a transfer of the interest of the Pacific Petroleum Company in the property, and an agreement on the part of the Penn Development Company to sell back the property. But they constitute one agreement. The agreement contains language from beginning to end showing that the Penn Development Company was simply advancing money to Pacific Petroleum Company in order to protect the Pacific Petroleum Company in the ownership of this property. It was agreed that when the Penn Development Company should be paid its money, the Pacific Petroleum Company would regain its property. The whole of the agreements must be read from beginning to end in order to comprehend the full force of plaintiff’s claim. Besides their language, which tends to show it is a mortgage, it seems to me that the oral testimony introduced in this case shows that it is a mortgage. I think that the testimony of Mr. Odell is entirely admissible for the purpose of showing that this arrangement is a mortgage. The fact that the vice-president of the Pacific Petroleum Company inquired into the legality of this agreement before the sale, indicates that it was the understanding between the plaintiff and the Penn Development Company that the plaintiff was to be pro-

tected as to the indebtedness owed to it by the Pacific Petroleum Company.

“Defendant makes the point that the certificates, or so-called interim bonds, delivered are a cancellation of that part of the agreement to deliver \$25,000 par value of the first mortgage bonds, but the interim certificates are simply receipts for bonds to be delivered. These instruments are simply memoranda of the progress toward the final adjustment of the matter.

“It appears from the evidence that the Pacific Petroleum Company has a judgment against Penn. Development Company for a large sum of money, more than enough to pay the indebtedness. The Pacific Petroleum Company is not entitled to a lien on this property in advance to the plaintiff's lien. A court of equity certainly has power to subject this judgment lien of the Pacific Petroleum Company to the claim of the plaintiff's equitable mortgage. The plaintiff is entitled to a decree foreclosing its contract as an equitable mortgage, and to have the same declared a first lien upon this property, together with costs and the amount to which the plaintiff is entitled, \$15,000 unpaid purchase money, \$25,000 with interest thereon in lieu of the bonds the Pacific Petroleum Company failed to deliver.”

The salient points to consider are:

I—The contract between plaintiffs and Dorsey, the obligations of which were assumed by Pacific Petroleum Company, whereby it was the duty of that company to pay the debt secured by deed of trust to Citizens Savings Bank.

2—The agreement between Pacific Petroleum Company and Penn Development Company by which the latter corporation undertook to advance money to protect Pacific Petroleum Company's property and in that connection to buy plaintiff's property for the benefit of Pacific Petroleum Company, whose duty it was to pay the debt represented by the Citizens Trust & Savings Bank, which agreement was a mortgage and subject to plaintiff's contractual rights.

3—It being the duty of Pacific Petroleum Company to pay the plaintiffs' debt, the defendant Penn Development Company in agreeing so to do and obtaining title through the trust deed sale as security in the nature of a mortgage, could have no greater rights than the Pacific Petroleum Company. Its equitable mortgage so acquired was therefore a second mortgage and subject to plaintiff's equitable lien on the premises for the payment of the balance of the purchase price due from Dorsey and Pacific Petroleum Company to it, of which Penn Development Company had not only constructive notice by recordation of the Ventura-California Oil Company-Dorsey contract and its assignment, but also actual notice as shown by the contract between Pacific Petroleum Company and Penn Development Company. [See Tr. p. 110, paragraph 1.]

ARGUMENT.

There are two causes of action set forth in the second amended complaint, the first of which is a complaint to quiet title, and the second to foreclose a

contract for the sale of real estate as an equitable mortgage lien.

The answer of the Penn Development Company claims title to the premises. The answer of the Pacific Petroleum Company is a denial of any amount due, but as the latter took no appeal its position need not be discussed.

1. On July 22, 1913, Ventura-California Oil Company and Stephen W. Dorsey entered into a written contract whereby the former agreed to sell and the latter agreed to buy the property on the following terms:

\$ 10,000, receipt of which was acknowledged at the time of the agreement.

15,000, Nov. 1, 1913, cash.

110,000 by transfer and assignment of 11,000 shares of Pacific Petroleum Company stock of that par value.

25,000 in \$25,000 par value of first mortgage bonds.

25,000 by assuming and paying an indebtedness of \$25,000 running to the Citizens Trust & Savings Bank, trustee.

Taxes, etc.

Dorsey thus became the principal under his agreement to pay the \$25,000 debt to the Citizens Trust & Savings Bank.

2. On July 24, 1913, Dorsey assigned this contract to the Pacific Petroleum Company "subject to all the conditions contained in said agreement upon the part of the party of the first part to be performed and which

the party of the second part herein agrees to perform," meaning that Pacific Petroleum Company thus agreed to assume and pay the Citizens Trust & Savings Bank mortgage, as well as the \$15,000 and make the transfer of the stock and bonds.

Thus the Pacific Petroleum Company became the principal and Dorsey the surety to pay the Citizens Trust & Savings Bank debt, and the Ventura-California Oil Company also stood in the relation of surety to both.

3. Being thus obligated to pay, Pacific Petroleum Company did not pay the \$15,000 nor the interest or debt on the Citizens Trust & Savings Bank mortgage nor the \$25,000 in bonds. On February 17, 1914, Pacific Petroleum Company and Penn Development Company entered into a contract containing, among other recitals, the following [Tr. fols. 109 *et seq.*]:

"Whereas, the said Pacific Petroleum Company is under contract to purchase in fee simple certain oil properties in the state of California;

Whereas, certain of the *agreed purchase price has not been paid* on certain of the properties *under contract of purchase* as aforesaid, and

Whereas, *certain underlying mortgages assumed by Pacific Petroleum Company have not been paid*, and

Whereas, the Pacific Petroleum Company is desirous of entering into an agreement under which its property may be, to such extent as may be found possible, *preserved upon terms and conditions set forth in this agreement*, and

Whereas, the property known as the Ventura-California property is about to be sold in proceedings under a trust deed (meaning the plaintiff's property).

Now, therefore, it is agreed (etc.):

First: The Penn Development Company agrees to purchase, at a sum not exceeding \$30,000, at the forthcoming trustee's sale, a title in fee simple to the Ventura-California property described as follows: (here describes property same as in complaint).

The Penn Development Company *is to take title to the same in fee simple absolutely without conditions or trust relations of any kind whatsoever, except the* Penn Development Company shall forthwith enter into *an option in the form attached hereto as Exhibit A.*

* * *

Fourth: The Pacific Petroleum Company *hereby transfers, sets over and assigns to the Penn Development Company* all its right, title and interest of every kind and description in and to *all the oil to be derived* from the operation of all the properties owned or leased by it or held by it under contract, to be held by the Penn Development Company in trust:

a. To pay expenses, etc.

b. To retain *the monthly sum of \$2500 for a period of four months, and thereafter \$5000 per month until all the money advanced for the benefit of the Pacific Petroleum Company shall have been paid to the Penn Development Company, or until such further period as shall be sufficient to pay to the Penn Development Company the amount to be paid under the option hereto attached as Exhibit A, for the Ventura-California property.*

c. The balance to be used in other manners.

(There are other paragraphs relating to methods of payments.)

Seventh: Pacific Petroleum Company covenanted also that upon the *payment of a sum not exceeding \$30,000* a title in fee simple may and shall be purchased by the Penn Development Company of and to the Ventura-California property on March 11, 1914."

Attached to this contract and as a part of it is Exhibit A, which substantially provides as follows:

In consideration of \$1.00 it grants to Pacific Petroleum Company the *exclusive option to purchase the Ventura-California property within three years for the sum of \$200,000 in cash, and certain stock*. Conditions are attached, among which are the following:

"3rd. There shall be subtracted from the purchase price under this option:

a. Twice such sum as shall comprise the difference between the amount advanced by the Penn Development Company and \$100,000.

b. Such sum shall be received by the Penn Development Company under the operation of subdivision b of the contract (which is the provision relating to retaining \$2000 to \$5000 a month, as stated above)."

Paragraph V refers to the agreement of February 17, 1914, and provides that should the payments in subdivision B cease, the option should terminate and expire.

The Penn Development Company did buy the property at the trustee's sale through W. H. Cochrane, trustee, and received deed from him and now wrong-

fully claims to own the property by virtue of such conveyance.

This arrangement was a mortgage arrangement, the Penn Development Company becoming the creditor of Pacific Petroleum Company for the sum of \$30,000 so far as this property is concerned, which was to be repaid with a large premium amounting, when the matter is estimated, under the terms of the option, to about \$28,000 in cash over and above the \$30,000, and in addition considerable holdings in stock. It took the title by purchase to the premises as security for the performance of this obligation.

4. Conditions being such, Penn Development Company failed to put in certain moneys or to proceed in conformity with the contract, and Pacific Petroleum Company sued Penn Development Company and obtained a judgment for \$325,000 damages, which judgment is in full force and vigor.

The fact that this judgment stands is evidence as between Pacific Petroleum Company and Penn Development Company of the adjustment of the covenants between them. Pacific Petroleum Company does not have to pay Penn Development Company anything and is entitled to a reconveyance of the property.

So far as plaintiff is concerned, it had a right to foreclose its contract and to have an order *nisi* adjudging that either Pacific Petroleum Company or Penn Development Company shall pay the balance due on this contract or be forever foreclosed of any rights therein.

Certain points of law need only be called to the attention of the court.

I.

**The United States Courts Administer Realty Rights
According to State Law and Practice.**

In a controversy respecting the title to lands in a state, United States courts will administer the law of the state in all respects as if it were a court sitting there and reviewing the decree of an inferior court in that locality.

Slaughter v. Glenn, 98 U. S. 242 (L. E. Vol. 25-122);

Hewitt v. Story, 39 Fed. 721.

And the fact that the District Court decided some of the facts on conflict of testimony should cause the court here to observe the rule followed by the California Supreme Court to the effect that as to such facts the findings of the trial court will not be disturbed.

II.

**Legal and Equitable Rights May Be Declared Upon
in the Same Action, and in Action to Quiet
Title Legal and Equitable Rights May Be
Adjusted.**

Actions at law and in equity may be joined if they arise out of the same matter. The form of actions is abolished both by the United States equity rules and by the Code of California.

Hughes v. Dunlap, 91 Cal. 389;

Watson v. Sutro, 86 Cal. 527;

Wolverton v. Baker, 86 Cal. 593;

Louvall v. Gridley, 70 Cal. 507.

Amendments are allowed to conform to the testimony.

Walsh v. McKeen, 75 Cal. 520.

In a quiet title suit legal and equitable rights may be adjusted.

Murphy v. Crosby, 140 Cal. 141;

Hughes v. Dunlap, 91 Cal. 385.

A complaint seeking to quiet plaintiff's title and also to annul a sheriff's deed to defendant under foreclosure of mortgage made subsequently to the record of a conveyance by mortgage under which plaintiff claims title, states only a single cause of action and there is no misjoinder.

Beronio v. Ventura C. L. Co., 129 Cal. 232;

Cady v. Purser, 131 Cal. 561.

In such case where defendant denies he holds a debt as security, no demand or offer to pay is necessary before bringing suit.

DeLeonis v. Walsh, 140 Cal. 175;

Coates v. Cleaves, 92 Cal. 427.

III.

A Proper Action in a Case of This Kind Is One to Foreclose the Contract of Purchase as an Equitable Mortgage, the Decree Giving the Defendant a Certain Period of Time to Pay or Be Foreclosed of the Right of Redemption. Here the Decree Was More Liberal, and Provided for a Term of Redemption.

In a case where one Keller agreed to sell real property on deferred payments to one Lewis, and entered into a written contract to convey the property after the payments should be made, it was held that the legal title was retained by the vendor as security for the balance of the purchase money, and that if the payments were not made when due, he might, if out of possession, bring an ejectment and recover the possession, or go into equity for relief as a better remedy in case of persistent default on the part of the vendee and institute proceedings to foreclose the rights of the vendee to purchase, the decree giving the latter a definite time within which to perform.

Keller v. Lewis, 53 Cal. 118.

This case has been cited and approved and followed in the following:

Fairchild v. Mullan, 90 Cal. 194;

Southern Pacific Co. v. Allen, 112 Cal. 462;

Glock v. Howard, 123 Cal. 11;

Greenwood v. Beeler, 152 Cal. 415;

Vance Redwood L. Co. v. Durphy, 8 Cal. App.

It Is Well Established California Law.

A case in point is *Odd Fellows Savings Bank v. Brander*, 124 Cal. 257, which was an action to foreclose the rights of the vendee under a contract for the purchase and sale of land. Brander, the vendee, had assigned his interest in the contract to other defendants who were made parties to the action. The court in that action said:

“1. Appellants claim that, as the contract had passed to the defendants other than Brander, the sixty-day limitation in which to make payment ought to have run to them and not to Brander. The promise to pay was by Brander alone. The other defendants assumed no liability to plaintiff and none was enforceable against them by plaintiff. They were made parties, and as assignees of Brander could have fully protected themselves by asking that they be permitted, as Brander’s assignees, to bring the money into court and make payment within the time fixed by the court. They made no such request, and no cause appears, either from the answer or the stipulated facts, entitling them to be treated as principal debtors or vendees. Brander’s obligations to plaintiff remained undischarged after his assignment to the other defendants. (Cvi. Code, sec. 1457.) These latter defendants have no cause for complaint that the sixty-day privilege to pay for the property and take a deed did not in terms include them. (*Truebody v. Jacobson*, 2 Cal. 269.)

2. Appellants contend that the decree should have ordered the property sold in the event of failure to redeem within sixty days, as in the case of a mortgage. Appellants misconceive the pur-

pose of the remedy. The course pursued in this case was in harmony with the well-settled practice in this state in like cases. (Sparks v. Hess, 15 Cal. 186; Keller v. Lewis, 53 Cal. 113; 56 Cal. 466; Fairchild v. Mullan, 90 Cal. 190; Southern Pac. R. R. Co. v. Allen, 112 Cal. 455; Rayfield v. Van Meter, 120 Cal. 416.)

“3. It is objected that the decree gives plaintiff the land and allows it to retain the money paid on account of the price. This was not error. It is well settled that ‘a party who has advanced money, or done an act, in part performance of the agreement, and then stops short and refuses to proceed to its ultimate conclusion, the other party being ready and willing to proceed and fulfill all his stipulations according to the contract, will not be permitted to recover back what has thus been advanced or done.’ (Hansbrough v. Peck, 5 Wall. 497; Ketchum v. Everston, 13 Johns 359, 7 Am. Dec. 384; Keller v. Lewis, *supra*.) This is true whether or not the contract provides for a forfeiture of payments made in case of the vendee’s failure to complete the purchase. (Glock v. Howard etc. Co., 123 Cal. 1.) The present case is a striking illustration of the wisdom and justice lying at the root of this rule. Brander and his assigns have been in possession of this land since the purchase, presumably receiving its rents and profits, and have not only failed to make the payments due on the principal debt, but have defaulted in payment of rent and taxes to an amount greater than the payments made on the price. The contention of defendants has no merit. The law will not permit defendants to profit pecuniarily by their own default.”

See, also,

Cross v. Mayo, 167 Cal., at page 606;

Birch v. Cooper, 136 Cal. 638;

Woodard v. Hennegan, 128 Cal. 293;

Whittier v. Stege, 61 Cal. 241.

In the case entitled Moultrie v. Wright, 154 Cal. 520, the facts were as follows: Fitch conveyed by deed to Tapia certain land. The consideration was \$600.00 in cash and three lots conveyed by Tapia to Fitch, and also a deed from Amaya conveying another parcel of land to him. Tapia and Amaya agreed between themselves that each should own an undivided half of the land bought of Fitch, and that Tapia should hold title to the one-half in trust for her. Doane loaned Tapia \$1000.00 and Doane was informed that Tapia held one-half in trust for Amaya. Doane foreclosed his mortgage. Prior to the foreclosure Tapia and Amaya mortgaged the land to Hoffman, who assigned the mortgage to Wright. Tapia and his wife then conveyed the land to Hoffman in satisfaction of the Hoffman mortgage. Hoffman claimed that he owned half of the property *formerly* belonging to Amaya free of Doane's mortgage. The court held that payment of one-half the purchase price of the Fitch land by Amaya constituted her an owner, and that Tapia, who took the title, as a resulting trust in favor of her of one-half. We quote from the opinion as follows:

“And if Doane took his mortgage from Tapia with knowledge of the trust, his mortgage lien was subject thereto, then any title to such one-half interest that might be obtained by him, or by his

estate, or by his administratrix in her representative capacity, under a foreclosure of such mortgage, would be held as successor of Tapia in trust for Carlotta Tapia or Hoffman, her grantee, free from the mortgage lien. (Prince v. Reeves, 38 Cal. 457; Riley v. Martinelli, 97 Cal. 580 (33 Am. St. Rep. 209, 32 Pac. 579); Murphy v. Clayton, 113 Cal. 157, 45 Pac. 267.) * * *

“Furthermore, the evidence of the agreement of Tapia, that he would hold title to one-half the land in trust for Amaya, was important and material on the question of laches. If he took the title in his own name without her knowledge or consent, the law would raise a constructive trust; if by agreement with her, then only a resulting trust would be created. (Fulton v. Jansen, 99 Cal. 591, 34 Pac. 331.)”

Applying the principles in these cases to the case at bar, it is clear that upon failure of Dorsey or of Pacific Petroleum Company to perform the conditions of the contract with plaintiff, the latter might foreclose its lien on the property as an equitable mortgage.

If appellant desired to protect its title or mortgage lien it could pay appellee the balance of the purchase price.

IV.

The Defendants Are Estopped to Deny Plaintiff's Title.

In the contract between Pacific Petroleum Company and Penn Development Company the contract of the plaintiff and Dorsey, assigned to and assumed by the Pacific Petroleum Company, is expressly recognized.

No agreement of these two defendants could impair the rights of the plaintiff under its contract with Dorsey and Pacific Petroleum Company.

Coates v. Cleaves, 92 Cal. 430;

Hicks v. Lovell, 64 Cal. 20;

Tyler on Ejectment, 558.

V.

Retention of Title by a Vendor Is in the Nature of an Imperfect or Equitable Mortgage to Secure the Balance of the Purchase Price.

Where an executory contract for the sale of land is made by parties, it is held that the retention of the legal title by the vendor as security for the payment of the balance of the purchase money, giving only an equitable estate in the land to the vendee, establishes the relation of an imperfect or equitable mortgage, and the land is by such express contract held in pledge for such payment.

Longmaid v. Coulter, 123 Cal. 208.

VI.

Pacific Petroleum Company, by Assuming to Pay the Plaintiff's Debt to Citizens Savings Bank, Became the Principal Debtor.

It is well settled that the grantee of the mortgaged premises who not only takes the land subject to the mortgage, but assumes its payment, is liable to the mortgagee for any deficiency which may remain after exhausting his security under the mortgage; though as to the ground upon which

this liability is placed the authorities are by no means uniform. That he is so liable, see *Biddel v. Brizzolara*, 64 Cal. 354; *Pellier v. Gillespie*, 67 Cal. 583; *Thomson v. Bettens*, 94 Cal. 82; *Williams v. Naftzger*, 103 Cal. 438; *Keller v. Ashford*, 133 U. S. 622. * * *

“The best considered cases place the liability of the subsequent grantee of the mortgaged premises who has assumed the payment of the debt upon the ground that, as between him and his grantor, he becomes primarily liable for the payment of the debt secured by the mortgage, and his grantor becomes his surety; that, though as between the grantor, Madden, and the plaintiff, the mortgagee, Madden is the principal debtor, yet in equity the creditor is entitled to the benefit of all securities or collateral obligations that his debtor may have acquired for the payment of the debt, and the creditor may, in his action to foreclose the mortgage, treat the mortgagor’s grantee, who has assumed the payment of the debt, as a principal debtor, and hold him liable for any deficiency for which the mortgagor would be liable on his express promise. (*Williams v. Naftzger*, *supra*, and cases there cited.)”

Tulare County Bank v. Madden, 109 Cal. 314;
Hopkins v. Warner, 109 Cal. 133;
Krelling v. Krelling, 118 Cal. 419;
1 Jones on Mortgages, section 741.

Furthermore, the grantor of the land is authorized to bring an action to enforce the payment of the mortgage without first making the payment himself.

Krelling v. Krelling, 118 Cal. 419;
Abell v. Coons, 7 Cal. 105;
1 Jones on Mortgages, section 769.

VII.

Pacific Petroleum Company Being the Principal and Obligated to Pay the Mortgage Running to the Citizens Trust & Savings Bank Given by Ventura California Oil Company, Entered Into a Written Agreement Whereby Defendant Penn Development Company Advanced Money to Purchase at the Trustee's Sale a Legal Title Which the Pacific Petroleum Company Would Have Acquired Had It Paid the Debt Itself and Kept the Other Covenants of Its Agreement, and by Agreeing to Convey the Title to the Pacific Petroleum Company for the Considerations Expressed in the So-Called Option, the Relation of Mortgagor and Mortgagee as Between Said Defendants Was Established. The Penn Development Company Having Taken Title Subject to the Contract of the Ventura-California Oil Company With Dorsey and Pacific Petroleum Company, Is Subject to Its Provisions, Because It Did No More Than Was Required of the Pacific Petroleum Company When It Paid a Debt to Citizens Savings Bank Which That Company Had Agreed to Pay.

In *Sandfoss v. Jones*, 35 Cal. 481, it appears that in August, 1865, one Bartram was the owner of a tract of land, but was in debt, and one Jones had a mortgage on a parcel of real estate. All of his creditors brought suit, Jones bringing a suit to foreclose and the others bringing attachments. Bartram applied to Jones and Blanchard for assistance and it was finally

agreed that Jones and Blanchard should receive possession of all of Bartram's property, *that they would bid in certain properties at sheriff's sale on executions and hold the title as security for such advances as they might make and the debts which would then be due them, and that whenever sales of personal property to be made by them and the profits of business should reimburse them for advances made, if they acquired the titles at sheriff's sale, they would restore him to possession of his real estate and all the personal property remaining unsold.* They carried out this agreement by bidding in real estate and receiving a sheriff's deed in their own names. In time all the claims against Bartram were extinguished, including their own, with money derived from the property and business. Bartram demanded an account and a reconveyance of his property. Then Bartram conveyed all his interest to plaintiff Sandfoss, while defendant Blanchard conveyed his interest to Flansburg, who took with notice of Bartram's equity. Plaintiff Sandfoss brought an action for an accounting and a reconveyance of the properties and won.

In the case at bar, Ventura-California Oil Company, being indebted, obtained the written agreement of Dorsey and of the Pacific Petroleum Company to pay the debt, and Pacific Petroleum Company, being either unwilling or unable to do so, agreed with Penn Development Company that if Penn Development Company would bid in the property of plaintiff Ventura-California Oil Company, then out of the profits derived from sales of oil produced on the land the

amounts advanced by Penn Development Company should be repaid, and also that Pacific Petroleum Company should have an option to repurchase, as an alternative proposition.

The cases are on all fours. The court said in that case:

“If, however, we consider the averments of the complaint in the light which is most favorable to the defendants, we have a verbal agreement on their part with an execution debtor, whose land is about to be sold by the sheriff, to purchase it with their own funds, and hold it for his benefit. *Such an agreement is equivalent to a loan of the money and a taking of the title as security for its repayment*; or an agreement by one person to purchase land for the benefit of another, under circumstances which would amount to a fraud upon the latter, if the former was allowed to repudiate his promise, and, therefore, not within the statute of frauds.

“In relation to such a contract the High Court of Errors and Appeals of the state of Mississippi said: ‘It is not now an open question that when a party agrees before the sale to purchase property about to be sold under an execution against a party, and to give such party the benefit of the purchase, that the agreement is binding and will be enforced. The defendant, upon the faith of such an agreement, may have ceased his efforts to raise the money for the purpose of paying off the execution, and thus preventing a sale of his property. It will not do to say that the party promising was moved merely by friendly or benevolent considerations, and may, therefore, at his option, decline a compliance with his agreement. Such con-

siderations constitute the foundation of almost every trust, and the trustee should be held to account as nearly as possible in the same spirit in which he originally contracted. But it is said that the agreement, if in fact made, was void under the statute of frauds. The statute has reference alone to the sale of lands, and not to a contract to purchase by one person for the benefit of another.' (Soggins v. Heard, 31 Miss. 428.)"

The court held that plaintiff should recover and be allowed to redeem the land and have a reconveyance.

Where the lender of money took as collateral security a note and mortgage for a much larger sum on a third person with an express understanding that he should foreclose the mortgage, buy in the premises at the sale, and hold them in place of note and mortgage as security for his loan, it was decided that he held a resulting trust in the nature of a mortgage, citing Sandfoss v. Jones as authority. The creditor who foreclosed the mortgage and purchased it, then sold it to a man named Wilson, who took with notice of the situation, and as to him it was held the property was charged with the trust.

Price v. Reeves, 38 Cal. 460.

Sandfoss v. Jones, *supra*, is cited also in another case, holding that where the owner of land about to be sold for taxes requests another to buy it in and furnishes him money therefor and the latter buys it in at the tax sale in his own name, he becomes a resulting trustee for the former owner, although he made no express promise to purchase it for the latter.

O'Connor v. Irvine, 74 Cal. 439.

That one who purchases property at a sale under execution or trust deed with an agreement that the owner or his assignee may redeem obtains only a mortgage interest, as stated in *Sandfoss v. Jones*, *supra*, is held in the following cases from other states to be the general rule:

Gaines v. Bockerhoff, 136 Pa. 175;

Hoile v. Bailey, 58 Wis. 434;

Phelan v. Fitzpatrick, 84 Wis. 247;

Wilson v. McWilliams, 16 S. D. 96;

Blair v. McMillan (Tenn.), 59 S. W. 788;

Papineau v. Grant, 2 Grant Ch. (U. C.) 512;

Mahaffy v. Faris, 144 Iowa 220;

Snavelly v. Preckle, 29 Gratt. (Va.) 27;

Combs v. Little, 4 N. J. Eq. 310;

Klocks v. Walter, 70 Ill. 416;

Morris v. Budlong, 78 N. Y. 543;

American Mtge. Co. v. Williams, 145 S. W. 239.

“F and J, desiring to purchase some land, requested E to advance the money and as security for its repayment, to take title to the land. In such cases a trust is presumed to result in favor of the persons paying the consideration, and the grantee will be declared a trustee for them as to the land. (C. C. Sec. 853.) The loan of money by E to the purchasers was in legal effect a transfer of the money to them. The consequence was that when the money was paid in the settlement of the purchase price it was their money and not E's that was so paid. The fact that it was paid directly to the vendors by her (E's) agent does not alter the legal effect of the transaction. The transfer being

made to E, she became a trustee holding title to the land for the other interested parties. No writing was necessary to create a trust of this character. It is a trust which the law implies from the facts of the case, and may be created without writing."

Brown v. Spencer, 163 Cal. 593.

But in the case at bar we have a written agreement.

In the case of Coutts v. Winston, 153 Cal. 686, one Coutts owed a bank a debt secured by mortgage on a parcel of real estate. Being unable to pay it he requested Winston to advance him enough to pay it and a small sum in addition, and to take a deed of the property. He gave a deed subject to the mortgage, received from Winston a lease for one year on the property, and in the lease *an option to purchase the property* at the amount advanced by Winston to pay the mortgage and the money in addition above mentioned. No promise to repay was made at any time by Coutts, but Coutts agreed verbally to further quitclaim at the end of the option term. This agreement was held an equitable mortgage.

In Meeker v. Shuster, 5 Cal. Unrep. Cas. 582, it appears that one Shuster owed Barnes money on a contract of purchase wherein Barnes agreed to sell and Shuster agreed to buy a parcel of land. Shuster applied to Meeker for a loan to pay the balance due on the contract, and requested him to take a mortgage. Meeker refused to take a mortgage, but agreed to pay the amount due to Barnes, take a deed direct from him for the property, and give Shuster a bond for a deed

by which he obligated himself to convey the land to Shuster in ten years upon payment of the amount which he advanced to Barnes, with interest. An action was brought by Meeker to have the deed received by him declared a mortgage and to foreclose the same.

The court said:

“Section 2924 of the Civil Code provides: ‘Every transfer of an interest in property other than in trust, made only as a security for the performance of another act, is to be deemed a mortgage, except when in case of personal property it is accompanied by actual change of possession, in which case it is deemed a pledge.’ See, also, *Montgomery v. Spect*, 55 Cal. 352. If the transfer created a trust, as contended by appellant, it would not aid him, since in that case the terms of the trust were evidenced by the bond, and the trustee of the title could not claim the possession until the bond should be forfeited or canceled by the defendants. It was not a trust, however, in the sense of the statute, but a mortgage.”

In *Meeker v. Shuster*, 4 Cal. App. 296, the action was to foreclose the mortgage mentioned in the above case, and the court approves the judgment in that case.

In *Windt v. Covert*, 152 Cal. 352, Covert purchased land from Brown with money she borrowed of Windt, and directed Brown to execute a conveyance to Windt as security. There was a mortgage to one Hardy on the premises already, and Hardy brought an action to foreclose and the plaintiff paid Hardy. An action was brought by Windt to foreclose his deed as a mortgage. The court said:

“That the conveyance of the property in question to the plaintiff, under the circumstances above set forth, constituted him the holder of a special lien within the meaning of the Civil Code (see sec. 2875) is not questioned. The plaintiff became the holder of the legal title, subject to a resulting trust in favor of the defendant, the real purchaser. But the fact that the title was conveyed as security gave the transaction, in equity, the additional character of a mortgage. (Civ. Code, sec. 2928.) ‘In such a case the grantee holds a double relation to the real purchaser, he is his trustee of the legal title to the land and his mortgagee for the money advanced for its purchase.’ (Campbell v. Freeman, 99 Cal. 546, 548 (34 Pac. 113); Woodard v. Hennegan, 128 Cal. 293 (60 Pac. 769); Banta v. Wise, 135 Cal. 277, 67 Pac. 129.)”

See, also,

Todd v. Todd, 164 Cal. 258.

The foregoing case cites Campbell v. Freeman, 99 Cal. 548, wherein it appeared that a similar transaction was had, and in holding that a conveyance is none the less a loan because it was made to the grantee directly by third party to secure a loan to a purchaser for the amount of purchase money, the court said:

“Equity looks beyond the form of a transaction and shapes its judgments in such a way as to carry out the purposes of the parties to the agreement and to protect each of them against any unconscionable advantage to be derived from the apparent form in which the transaction has taken place.”

Perry on Trusts, section 133, states a rule as follows:

“If one should advance the purchase money and take the title to himself, but should do this wholly upon the account and credit of the other, he would hold the estate on a resulting trust for the other.”

Cited in

Hellman v. Messmer, 75 Cal. 170;

Thomas v. Jameson, 77 Cal. 93.

Where a person bought property, but the contract to purchase was taken in the name of another who advanced the money at his request and who agreed to take the title to the contract of sale in his name as security for the payment of advances made by him, it was held that the resulting trust in the nature of a mortgage was thereby constituted.

Walton v. Karnes, 67 Cal. 256.

Cited in

Ward v. Matthews, 73 Cal. 16;

Savings Society v. Davidson, 97 Fed. 712.

Appellant's Points.

A careful examination of appellant's points and argument does not even raise a doubt in our minds of the soundness of our theory of the case, as comprehended and approved by the able trial judge who had many years of active practice in California law before going on the bench and whose ability is only matched by his extensive learning.

Some of the points made are frivolous.

For instance, in speaking of the duties of Secretary Peters as manager, it was testified at length by Mr. Odell as to Peters' general duties, and, not in connection with any discussion of the amounts due on the contract, but only as describing his general duties, Mr. Odell said: "He was our secretary and treasurer and

received the money and paid it out on order of the board of directors." On page 16 of the appellant's brief counsel capitalize the words "*received the money*" as if it referred to the \$15,000 under discussion on that page. Counsel can not be serious, surely!

It must be camouflage, for the answer of the Penn Development Company admits [Tr. p. 28] that said sum was not paid, and also admits that the \$25,000 in bonds were not turned over. The answer of Pacific Petroleum Company is not evidence, and it is not the answer of appellant.

The above remarks are pertinent to appellant's argument concerning the bonds on pages 13 to 18, inclusive, where, although appellant's answer admits that the bonds were not delivered, yet counsel gravely and extensively argue to the contrary by asserting that the so-called "Interim Bonds," or receipts stating that bonds would be delivered, were payment of the \$25,000 of the purchase price, due to appellees under the contract of sale between the Ventura-California Oil Company and Dorsey, which was assigned to Pacific Petroleum Company.

The answer of the Pacific Petroleum Company [Tr. p. 32] admits that the \$25,000 par value of bonds had not been delivered, but does allege that "temporary receipts for such bonds were executed and delivered to plaintiff, etc."

Debts cannot be paid by receipts or statements promising to deliver payments some time later.

All other points made by appellant are refuted by the abundant authority cited above in our main argument.

Counsel devote considerable space to a discussion of estoppel, and claim it should have been pleaded by plaintiff. In an action to quiet title in California or to foreclose a mortgage or a lien in the nature of a mortgage, plaintiff need only set forth claim of title or the instruments sued on and allege aptly defaults or that defendants claim some interest which is subject to plaintiff's title. He does not have to set up defendants' claim of title and then proceed to knock it down. Defendant must plead a special defense if he have any, either facts to estop plaintiff or in bar or by way of avoidance. If he plead a special defense, it is not necessary in California to file a replication setting up an estoppel or an avoidance of the allegations in the answer. All such matters in the answer, whether pleaded affirmatively or not, are deemed denied or answered, and all facts that may create an estoppel are deemed well pleaded.

As this case was begun in a Superior Court of California, and transferred to the District Court of the United States, the rules of California practice have been followed. And even if the cause had been begun in the District Court, the pleadings and practice of the California courts would have been followed.

No cases need be cited on these rules. Code provisions cover them.

We respectfully submit that the judgment should be affirmed.

TANNER, ODELL & TAFT,
PEYTON R. MOORE,
Attorneys for Plaintiffs and Appellees.

United States
Circuit Court of Appeals
For the Ninth Circuit

Transcript of Record

GEORGE J. HENRY, Jr.,
Complainant.

vs.

CITY OF LOS ANGELES,
Defendant.

VOLUME 1
(Pages 1 to 400 Inclusive)

Upon Appeal from the United States District Court for
the Southern District of California,
Southern Division

FILED

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Names and Addresses of Attorneys.

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Bldg., Los Angeles, California.

*United States District Court, Southern District of Cali-
fornia, Southern Division.*

IN EQUITY FOR INFRINGEMENT OF LETTERS
PATENT.

GEORGE J. HENRY,
Complainant,

vs.

CITY OF LOS ANGELES,
Defendant.

Bill of Complaint.

TO THE HONORABLE THE JUDGE OF THE DIS-
TRICT COURT OF THE UNITED STATES IN AND
FOR THE SOUTHERN DISTRICT OF CALIFOR-
NIA, SOUTHERN DIVISION:

George J. Henry, Jr., a citizen of the State of Cali-
fornia, and resident of San Francisco, County of San
Francisco, in said State, brings this, his Bill of Com-

plaint, against the City of Los Angeles, of Los Angeles County, California, a municipal corporation organized and existing under and by virtue of the laws of the State of California, defendant, and thereupon, complaining, shows unto your Honors:—

I.

That heretofore and prior to the thirteenth (13th) day of September, A. D. 1900, one Lamar Lyndon, of New York, New York, was the original, first and sole inventor of a certain new and useful Electromechanical Water-Wheel Governor, etc., not known or used by others before his invention or discovery thereof, or patented or described in any printed publication in the United States of America or any foreign country, before his invention or discovery thereof, or more than two years prior to his application for Letters Patent thereon in the United States of America, or in public use or on sale in the United States of America for more than two years prior to his said application for Letters Patent of the United States of America therefor, and not abandoned.

II.

That said Lamar Lyndon, so being the original, first and sole inventor of said Electromechanical Water-Wheel Governor, etc., to-wit on September 13, 1900, made application in writing in due form of law to the Commissioner of Patents of the United States of America, in accordance with the then existing laws of the United States in such case made and provided, and complied in all respects with the conditions and requirements of said law; that thereafter such proceedings were duly and regularly had and taken in the matter of such

application, that, to-wit, on March 11, 1902, Letters Patent of the United States, Number 695,220, were duly and regularly granted, issued, and delivered by the Government of the United States to said Lamar Lyndon, whereby there was granted and secured to said Lamar Lyndon, his heirs, legal representatives and assigns, for the full term of seventeen (17) years from and after said 11th day of March, 1902, the sole, exclusive right, liberty and privilege to make, use and vend the said invention throughout the United States of America and the territories thereof; that the said Letters Patent were duly issued in due form of law under the seal of the United States Patent Office and duly signed by the acting Commissioner of Patents, all as will more fully appear from said original Letters Patent which are ready in court to be produced by your orator; and that prior to the grant and issuance and delivery of said Letters Patent all proceedings were had and taken which were required by law to be had and taken prior to the issuance of Letters Patent for new and useful inventions.

III.

That the said invention so set forth, described and claimed in and by said Letters Patent No. 695,220 aforesaid, is of great value, and that since the grant and issuance of said Letters Patent the said Electro-mechanical Water-Wheel Governor, etc., has gone into great and extensive use and the said defendant has been, long prior to the commencement of this suit, notified in writing of the grant and issuance of said Letters Patent No. 695,220 and of the rights of your orator and your orator's assignor thereunder, and demand has been

made upon said defendant to respect the said Letters Patent and not to infringe thereon, but notwithstanding such notice the defendant has continued to make and cause to be made and has used Electromechanical Water-Wheel Governors, etc., embodying the said invention, as hereinafter more particularly set forth.

IV.

And your orator further shows your Honors that the trade and public have generally respected and acquiesced in the validity and scope of said Letters Patent No. 695,220, and the exclusive rights of your orator and of your orator's assignor therein and thereunder, and save and expect for the infringement thereof by defendant, as hereinafter set forth, and possibly by a limited number of other parties, your orator and your orator's assignor have had and enjoyed the exclusive right, liberty and privilege, since March 11, 1902, of manufacturing, selling and using Electromechanical Water-Wheels, etc., embodying and containing the invention described in, set forth and claimed in said Letters Patent No. 695,220, and but for the wrongful and infringing acts of defendant, as herein set forth, and possibly of a limited number of other parties, your orator would now continue to enjoy the said exclusive rights and the same would be of great and incalculable benefit and advantage to your orator.

V.

And your orator further shows unto your Honors that heretofore, to-wit on July 7th, 1913, said Lamar Lyndon did sell, assign and transfer by an instrument in writing duly executed by him and delivered to your orator, all

the exclusive right, title and interest in and to said invention in Electromechanical Water-Wheel Governors, and in and to and under said Letters Patent No. 695,220, including in such assignment all rights of action, claims and demands of whatsoever nature arising out of or accruing from any past infringement of said Letters Patent.

VI.

And your orator further shows unto your Honors that notwithstanding the premises, but well knowing the same, and without the license or consent of your orator or your orator's assignor, and in violation of said Letters Patent and of your orator's' rights thereunder, the defendant herein, City of Los Angeles, has within the four years last past and at divers times and in the Southern District of California, Northern Division, to-wit, in the County of Inyo, State of California, and elsewhere, made and caused to be made and has used and is now using Electromechanical Water-Wheel Governors, etc., embodying, containing and embracing the invention described, claimed and patented in and by said Letters Patent, and has infringed upon the exclusive rights secured to your orator by virtue of said Letters Patent, and that the Electromechanical Water-Wheel Governors, etc., so made, caused to be made and used by defendant were and are infringements upon said Letters Patent, and each of the same contains in it the said patented invention; and that although requested so to do, defendant refuses to cease and desist from the infringement aforesaid and is now making or causing to be made and using Electromechanical Water-Wheel Governors, etc.,

containing and embracing the said patented invention, and threatens and intends to continue so to do and will continue so to do unless restrained by this Court; and is realizing, as your orator is informed and believes, large gains, profits and advantages, the exact amount of which is unknown to your orator; that by reason of the premises and the unlawful acts of the defendant aforesaid, your orator has suffered and is suffering great and irreparable injury and damage.

That for the wrongs and injuries herein complained of your orator has no plain, speedy or adequate remedy at law, and is without remedy save in a court of equity where matters of this kind are properly cognizable and relievable.

To the end, therefore, that the said defendant may, if it can show why your orator should not have the relief prayed, and may, according to the best and utmost of its knowledge, recollection, in formation and belief, but not under oath (an answer under oath being hereby expressly waived), full, true, and perfect answer make to all and singular the matters and things hereinabove charged, your orator prays that the defendant may be enjoined and restrained, both provisionally and perpetually, from further infringement upon said Letters Patent, and be decreed to account for and pay over to your orator the gains and profits realized by defendant from and by reason of the infringement aforesaid, together with costs of suit.

May it please your Honor to grant unto your orator a writ of injunction issued out of and under the seal of

this Court, provisionally and until the final hearing, enjoining, and restraining said defendant, City of Los Angeles, its attorneys, officers, agents, departments, boards, bureaus, servants and employees from making, causing to be made, or using any Electromechanical Water-Wheel Governors or the like containing or embracing the invention patented in and by said Letters Patent, and that upon the final hearing of this case said provisional injunction may be made final and perpetual, and that your orator may have such other and further relief as to your Honors may seem proper and in accordance with equity and good conscience.

May it please your Honors to grant unto your orator the write of subpoena issued out of and under the seal of this Court, directed to the defendant, City of Los Angeles, commanding it by a day certain and under a certain penalty fixed by law to be and appear before and under a certain penalty fixed by law to be and appear before this Honorable Court, then and there to answer this Bill of Complaint, and to stand to and perform and abide by such further orders and decrees as to your Honors may seem meet in the premises.

And your orator will ever pray.

(Signed) GEORGE J. HENRY, JR.

RAYMOND IVES BLAKESLEE,

Solicitor and of Counsel for Complainant.

State of California,

County of San Francisco,—ss.

George J. Henry, Jr., being first duly sworn, on oath says, that he is the Complainant in the above Bill of Complaint, that he has read said Bill of Complaint and

that the same is true of his own knowledge except as to such matters as are therein stated on information and belief, and as to such matters he believes said Bill to be true.

(Signed) GEORGE J. HENRY, JR.

Subscribed and sworn to before me,
this 12th day of September, 1913.

(Seal)

(Signed) L. B. RICHARDS,
Notary Public in and for San Francisco
County, State of California.

[TITLE OF COURT AND CAUSE.]

Answer.

Defendant, City of Los Angeles, answering the Bill of Complaint in the above entitled suit:

I.

Denies that one Lamar Lyndon was the original, first, or sole inventor of the alleged or any new or useful Electromechanical Water-Wheel Governor, etc., not known or used by others before his invention or discovery thereof, or patented or described in any printed publication in the United States of America or any foreign country before his pretended invention or discovery thereof, or more than two years prior to his alleged application for Letters Patent thereon in the United States of America, or in public use or on sale in the United States of America for more than two years prior to his said pretended application for Letters Patent of the United States of America therefor; denies that on September 13th, 1900, or at any time whatsoever,

said Lamar Lyndon made application in writing in due form of law to the Commissioner of Patents of the United States of America in accordance with the then existing law of the United States in such case made and provided, or complied in all or in any respect with the conditions or requirements of said law; denies that after the alleged or any proceedings were had or taken in the matter of said pretended application, the alleged or pretended Letters Patent of the United States alleged to be numbered 695,220, or any Letters Patent whatsoever, were on March 11th, 1902, or at any date whatsoever, granted or issued or delivered by the Government of the United States of America to said Lamar Lyndon; denies that by the said pretended Letters Patent the alleged or any sole or exclusive right, liberty, or privilege to make, use, or vend the said pretended invention in or throughout the United States of America, or the Territories thereof, or anywhere whatsoever, were granted or delivered to the said Lamar Lyndon, his heirs, legal representatives, or assigns, either for the full term of Seventeen (17) years from and after said 11th day of March, 1902, or for any time or term whatsoever; denies that the said alleged inventions so alleged to be set forth, described, and claimed in and by said pretended Letters Patent are of great or any value whatsoever; denies that since the pretended grant or issuance of said pretended Letters Patent the said Electromechanical Water-Wheel Governor, etc., has gone into great or extensive or any use whatsoever; denies that defendant has been, long prior to the commencement of this suit, or at any time, notified in writ-

ing of the grant or issuance of said Letters Patent, or of the alleged rights of the complainant or of complainant's assignor thereunder, or that the alleged or any demand has been made upon defendant to respect said pretended Letters Patent or not to infringe thereon; denies that this defendant has either prior or subsequent to the pretended notice or at any time whatsoever, made, or caused to be made, or has used, or has caused to be used Electromechanical Water-Wheel Governors, etc., embodying or containing the said alleged invention, or has ever intended so to do; denies that the trade or public have generally or at all respected or acquiesced in the validity or scope of said Letters Patent, or in or to the alleged exclusive right or rights of your orator or of your orator's alleged assignor therein or thereunder; denies that by any act of this defendant the complainant has suffered any damage or injury in any sum whatsoever; denies that except for the alleged infringement thereon by this defendant, as alleged in said bill of complainant, and possibly by a limited number of other parties, as alleged in the bill of complaint, complainant and complainant's assignor have had or enjoyed the exclusive right, liberty, or privilege since March 11th, 1902, or since any other time or date, or during any time whatsoever, of manufacturing, selling, or using Electromechanical Water-Wheel Governors, etc., embodying, or containing the alleged inventions alleged to be described, set forth, and claimed in and by said pretended Letters Patent.

II.

Denies that on July 7th, 1913, or at any other time,

said Lamar Lyndon did sell, assign, or transfer either by an instrument in writing or otherwise, or duly executed by him or delivered by him to complainant, all the exclusive or any right or title whatsoever in or to the right, title, and interest in or to said pretended inventions in Electromechanical Water-Wheel Governors, etc., or in or to or under said Letters Patent, or any or all rights of action, claims, or demands of whatsoever nature rising out of or accruing from any past infringement of said pretended Letters Patent.

III.

Denies that either with or without the license or consent of complainant or of complainant's alleged assignor or in violation of said Letters Patent or otherwise, or in violation of your orator's rights thereunder, this defendant has within the four years last past or at any time, either in the Southern District of California, Northern Division thereof, to-wit: in the County of Inyo, State of California, or at any place whatsoever, made or caused to be made, or has used, or is now using or making or causing to be made or to be used, any Electromechanical Water-Wheel Governors, etc., embodying or containing or embracing the pretended inventions described, claimed, or pretended to be patented in or by said pretended Letters Patent, or has any intention of so doing; denies that defendant has infringed upon the exclusive or any right or rights pretended to be secure to complainant by virtue of said pretended Letters Patent, or that any Electromechanical Water-Wheel Governor, etc., so made, caused to be made, or used by defendant is or are infringements upon or of said pre-

tended Letters Patent, or contains in it or them the said pretended patented invention; denies that by any use whatsoever of said pretended invention defendant has realized large or any profits, gains, or advantages whatsoever.

IV.

Further answering, upon information and belief, defendant alleges that the alleged or pretended improvements or invention purporting or pretended to be patented in or by said pretended Letters Patent No. 695,220 or things in all substantial and material respects the same as said alleged improvements or inventions had prior to the alleged or any invention or discovery thereof by the said Lamar Lyndon been patented or described in printed publications in the United States of America and in foreign countries, and particularly in and by the following Letters Patent, to-wit:

Letters Patent of France, No. 291,588, dated August 8th, 1899, granted to Societe Anonyme Des Ateliers De Constructions Mecaniques D'Escher Wyss & Company, for Regulating Device for Turbines.

Letters Patent of the Republic of Switzerland, No. 17,537, granted to Irene Schaad, Patent May 15th, 1899, Published July 15th, 1899.

Letters Patent of the United States, No. 688,801, granted February 26th, 1901, to Newton Lamb.

WHEREFORE, Defendant prays to be hence dismissed with its reasonable costs and disbursements in this behalf sustained.

CITY OF LOS ANGELES,
ALBERT LEE STEPHENS,

City Attorney.

By CHARLES S. BURNELL,

FREDERICK S. LYON,

Of Counsel for Defendant.

(Endorsements.)

[TITLE OF COURT AND CAUSE.]

IN EQUITY No. A-87.

Amended Answer of City of Los Angeles.

Now comes the above named defendant, City of Los Angeles, and by leave of Court first had and obtained, files this its Amended Answer to the Bill of Complaint in the above entitled cause, and for answer thereunto.—

I.

Denies that one Lamar Lyndon was the original, first, or sole inventor of the alleged or any new or useful Electromechanical Water-Wheel Governor, etc., not known or used by others before his invention or discovery thereof, or patented or described in any printed publication in the United States of America or any foreign country before his pretended invention or discovery thereof, or more than two years prior to his alleged application for Letters Patent thereon in the United States of America, or in public use or on sale in the United States of America for more than two years prior to his said pretended application for Letters Patent of the United States of America therefor; denies that on September 13th, 1900, or at any time whatsoever, said Lamar Lyndon made application in writing in due form of law to the Commissioner of Patents of the United States of America in accordance with the then existing law of the United States in such case made and provided, or complied in all or any respect with the conditions or requirements of said law; denies that after the alleged or any proceedings were had or taken in the matter of said pretended application, the alleged or pre-

tended Letters Patent of the United States alleged to be numbered 695,220, or any Letters Patent whatsoever, were on March 11th, 1902, or at any date whatsoever, granted or issued or delivered by the Government of the United States of America to said Lamar Lyndon; denies that by the said pretended Letters Patent the alleged or any sole or exclusive right, liberty, or privilege to make, use, or vend the said pretended invention in or throughout the United States of America, or the Territories thereof, or anywhere whatsoever, were granted or delivered to the said Lamar Lyndon, his heirs, legal representatives, or assigns, either for the full term of seventeen (17) years from and after said 11th day of March, 1902, or for any time or term whatsoever; denies that the said alleged inventions so alleged to be set forth, described, and claimed in and by said pretended Letters Patent are of great or any value whatsoever; denies that since the pretended grant or issuance of said pretended Letters Patent the said Electromechanical Water-Wheel Governor, etc., has gone into great or extensive or any use whatsoever; denies that the defendant has been, long prior to the commencement of this suit, or at any time, notified in writing of the grant or issuance of said Letters Patent, or of the alleged rights of the complainant or of complainant's assignor thereunder, or that the alleged or any demand has been made upon defendant to respect said pretended Letters Patent or not to infringe thereon; denies that this defendant has either prior or subsequent to the pretended notice or at any time whatsoever, made, or caused to be made, or has used, or has caused to be used Electromechanical

Water-Wheel Governors, etc., embodying or containing the said alleged invention, or has ever intended so to do; denies that the trade or public have generally or at all respected or acquiesced in the validity or scope of said Letters Patent, or in or to the alleged exclusive right or rights of your orator or of your orator's alleged assignor therein or thereunder; denies that by any act of this defendant the complainant has suffered any damage or injury in any sum whatsoever; denies that except for the alleged infringement thereon by this defendant, as alleged in said bill of complaint, and possibly by a limited number of other parties, as alleged in the bill of complaint, complainant and complainant's assignor have had or enjoyed the exclusive right, liberty, or privilege since March 11th, 1902, or since any other time or date, or during any time whatsoever, of manufacturing, selling, or using Electromechanical Water-Wheel Governor's etc., embodying or containing the alleged inventions alleged to be described, set forth, and claimed in and by said pretended Letters Patent.

II.

Denies that on July 7th, 1913, or at any other time, said Lamar Lyndon did sell, assign or transfer either by an instrument in writing or otherwise, or duly executed by him or delivered by him to complainant, all the exclusive or any right or title whatsoever in or to the right, title, and interest in or to said pretended inventions in Electromechanical Water-Wheel Governors, etc., or in or to or under said Letters Patent, or any or all rights of action, claims, or demands of whatsoever nature arising out of or accruing from any past infringement of said pretended Letters Patent.

III.

Denies that either with or without the license or consent of complainant or of complainant's alleged assignor or in violation of said Letters Patent or otherwise, or in violation of your orator's rights thereunder, this defendant has within the four years last past or at any time, either in the Southern District of California, Northern Division thereof, to-wit: in the County of Inyo, State of California, or at any place whatsoever, made or caused to be made, or has used, or is now using or making or causing to be made or to be used, any Electromechanical Water-Wheel Governors, etc., embodying or containing or embracing the pretended inventions described, claimed, or pretended to be patented in or by said pretended Letters Patent, or has any intention of so doing; denies that defendant has infringed upon the exclusive or any right or rights pretended to be secure to complainant by virtue of said pretended Letters Patent, or that any Electromechanical Water-Wheel Governor, etc., so made, caused to be made, or used by defendant is or are infringements upon or of said pretended Letters Patent, or contains in it or them the said pretended patented invention; denies that by any use whatsoever of said pretended invention defendant has realized large or any profits, gains or advantages whatsoever.

IV.

Further answering, upon information and belief defendant alleges that the alleged or pretended improvements or invention purporting or pretended to be patented in or by said pretended Letters Patent No. 695,220 or things in all substantial and material respects the

same as said alleged improvements or inventions had prior to the alleged or any invention or discovery thereof by the said Lamar Lyndon been patented or described in printed publications in the United States of America and in foreign countries, and particularly in and by the following Letters Patent, to-wit:

Letters Patent of France, No. 291,588, dated August 8th, 1899, granted to Societe Anonyme Des Ateliers De Constructions Mecaniques D'Escher Wyss & Company, for Regulating Device for Turbines.

Letters Patent of the Republic of Switzerland, No. 17,537, granted to Irene Schaad, Patented May 15th, 1899, Published July 15th, 1899.

Letters Patent of the United States, No. 668,801, granted February 26th, 1901, to Newton Lamb.

Letters Patent of the Republic of Switzerland, No. 17,536, granted to Irene Schaad, December 15th, 1898.

Letters Patent of the United States, No. 521,085, granted June 5, 1894, to C. S. English for ELECTRICAL GOVERNOR FOR WATER WHEELS.

Letters Patent of the United States, No. 519,597, granted May 8th, 1894, to E. P. Wetmore for ELECTRICAL WATER-WHEEL GOVERNOR.

V.

And defendant alleges that said Lamar Lyndon was not the original and first inventor or discoverer of any material and substantial part of the device alleged to be patented by the said pretended Letters Patent No. 695,220; and that said device had been in public use in this country for more than two years before the alleged application of said Lamar Lyndon for a patent therefor, and had been abandoned to the public; and that the de-

vise shown and described in said pretended Letters Patent No. 695,220 had been known and used by others in this country long prior to the pretended invention and discovery thereof by the said Lamar Lyndon, and particularly had been known and used by the Power Development Company, a corporation, organized under the laws of the State of California, at Bakersfield, California, during the years 1896 and 1897, and subsequently thereto; and had been known and used by Edward C. Cobb (whose address is Central Building, Los Angeles, California) at Bakersfield, California, during the years 1896 and 1897, and has been known by B. E. Van Emon (whose address is 235 First Street, San Francisco, California) since 1896 and 1897, and has been known by S. L. Berry (whose address is 317 Rialto Building, San Francisco, California) since 1896 and 1897, and was used by him at Bakersfield, California, during the years 1896 and 1897 and subsequently thereto.

VI.

And defendant alleges that the device of his said pretended Letters Patent, No. 695,220, had been described in various printed publications in this country prior to the alleged invention and discovery by the said Lamar Lyndon, and more than two years prior to his application for a patent therefor, and particularly had been described in the following printed publications:

Journal of Electricity published at San Francisco, California, in Volume 5, No. 1, page 15, under date of July, 1896, and under title "Electric Power at Bakersfield."

Journal of Electricity published at San Francisco, California, in Volume 4, No. 3, page 85, under date of

August, 1897, under the head "The Bakersfield Transmission."

Journal of Electricity published at San Francisco, California, Volume 4, No. 6, page 110, dated September, 1897, under head of "Water Wheel Government."

Engineering Magazine, November, 1897.

WHEREFORE, Defendant prays to be hence dismissed with its reasonable costs and disbursements in this behalf sustained.

CITY OF LOS ANGELES,

Albert Lee Stephens.

City Attorney.

By Charles S. Burnell,

Henry T. Hazard,

Of Counsel for Defendant.

Jospeh F. Westall,

Solicitors for Defendant.

(Endorsements.)

[TITLE OF COURT AND CAUSE.]

Decree.

This cause came on for final hearing on the 16th day of September, 1915, upon evidence hereinbefore taken before the Special Examiner appointed by the Court pursuant to stipulation heretofore filed herein, and was argued by counsel for the respective parties from time to time thereafter until and including the 5th day of November, 1915, when the Court, arguments of counsel being concluded, took time to consider; and the Court having considered, and now being fully advised in the premises, doth find the issues joined herein in favor of

the defendant; and it is, thereupon, ORDERED ADJUDGED AND DECREED, that the bill of complaint in this cause be, and the same is hereby dismissed for want of equity at the costs of said complainant.

Dated this 17th day of January, 1916.

(Signed) TRIPPETT,

O. K. As to form

Judge.

RAYMOND IVES BLAKESLEE,

Solicitor and of counsel for Complainant.

[TITLE OF COURT AND CAUSE.]

To Raymond Ives Blakeslee, Esq., attorney for plaintiff,
and Joseph F. Westall, Esq., attorney for defendant:

You are hereby notified that on April 13, A. D. 1914, at the hour of ten o'clock A. M., at the opening of court, or as soon thereafter as counsel can be heard, The Pelton Water Wheel Company, a corporation created under the laws of the State of California and having its principal place of business at the City and County of San Francisco in said State, will move the above entitled Court at the courtroom thereof at the City of Los Angeles, State of California, for leave to intervene in the above entitled suit and to be made a party defendant therein and be allowed to file an answer to the plaintiff's bill and to defend the said suit, and for such other and further relief as may appear proper to the Court.

The grounds of said motion will be that said The Pelton Water Wheel Company claims an interest in the said litigation and will be directly effected by the event thereof for the reasons appearing in its petition to intervene, which is herewith served upon you.

On the hearing of said motion the petitioner will use, read and refer to all the pleadings and papers on file in the said suit together with a petition for the right to intervene which is hereunto annexed and hereby referred to and made a part hereof.

Yours, etc.,

THE PELTON WATER WHEEL COMPANY.

by Miller & White,

Its Attorneys.

JOHN H. MILLER,

WM. K. WHITE,

Solicitors and Attorneys for Petitioner.

Dated, this 3rd day of April, 1914.

[TITLE OF COURT AND CAUSE.]

Petition by the Pelton Water Wheel Company for Leave to Intervene in the Above Entitled Suit.

Now comes The Pelton Water Wheel Company and petitions this Honorable Court for leave to intervene in the above entitled suit and to be joined as a party defendant therein for the purpose of defending the same and resisting the claims of the plaintiff, and in that behalf your petitioner alleges:

I.

That your petitioner is a corporation created and existing under the laws of the State of California and having its principal place of business at the City and County of San Francisco in the State of California.

II.

That the above entitled suit was begun on September 17th, 1913, by the filing on that day of a bill of complaint by George J. Henry, Jr., as plaintiff, against the City of Los Angeles, as defendant, wherein and whereby it was alleged that the said plaintiff was the owner and holder of certain letters patent of the United States for a device styled Electromechanical Water Wheel Governor, which said letters patent are numbered 695,220, and were issued by the Government of the United States on March 11, 1902, to one Lamar Lyndon, and thereafter duly assigned to the plaintiff on July 7, 1913, and that ever since said last named day plaintiff has been the sole owner and holder of the said letters patent and of all the rights and liberties granted thereby and of all claims and demands for infringement thereof theretofore accruing.

III.

That thereafter and in due season the City of Los Angeles appeared in said suit by its attorney and solicitor and filed an answer denying the validity of said letters patent and also denying infringement thereof by the City of Los Angeles.

IV.

That upon the issues so joined testimony has been taken on behalf of the plaintiff and his prima facie proofs are closed, and the defendant has been allowed until April 16, 1914, in which to offer its evidence in defense, but up to the present time no such evidence has been introduced.

V.

Your petitioner further alleges that the particular

machine or implement used by the defendant and claimed by the plaintiff to be an infringement of its said patent is a certain water-wheel governor with its attendant mechanism which was sold by the Abner Doble Company, a corporation, to the City of Los Angeles and installed and used by said City of Los Angeles in its system of water works for supplying water to its inhabitants.

VI.

That heretofore, to-wit, on January 12, 1912, the City of Los Angeles in its capacity as a municipal corporation entered into a contract with the Union Iron Works Company, a corporation created under the laws of the State of New Jersey and doing business in the City and County of San Francisco, in the State of California, whereby the said Union Iron Works Company covenanted in consideration of the sum of \$194,000.00 to furnish and deliver to the City of Los Angeles certain hydro-electric machinery for installation in and by the City of Los Angeles in its public water-works for supplying water to the inhabitants of Los Angeles, and in and by said contract said City of Los Angeles covenanted to pay to said Union Iron Works Company \$194,000.00 for said machinery.

VII.

That in and by said contract the Union Iron Works Company covenanted and agreed to save, keep harmless, and indemnify the City of Los Angeles from any and all claims of infringement that might be made against the City of Los Angeles by any person whatsoever from and by reason of the installation and use by the City of Los Angeles of the machinery called for by said contract, and, in case of any action or suit to enforce any

such claims, covenanted that the said Union Iron Works Company would defend said suit at its own cost and free of any cost or charge to the City of Los Angeles.

VIII.

That thereafter, to-wit, on February 17, 1912, said contract between the City of Los Angeles and the Union Iron Works Company was assigned by the Union Iron Works Company to your petitioner, which assignment was consented to by the City of Los Angeles, and thereupon your petitioner became substituted in the place and stead of the Union Iron Works Company and assumed all the obligations and duties provided for in said contract to be assumed and performed by the Union Iron Works Company, and the City of Los Angeles looks to your petitioner to perform and carry out all said obligations and duties.

IX.

And your petitioner further shows that in pursuance of said contract and said assignment, your petitioner has furnished and delivered to the City of Los Angeles practically all of the machinery called for and covered by the said contract and a part of the same has already been installed and put in place ready for use and the remainder thereof will be installed in the near future, and such installation will be completed as soon as practicable; that said City of Los Angeles has paid to your petitioner approximately one-half of the aforesaid purchase price and the remainder thereof is unpaid.

X.

That the machinery covered and called for by said contract and heretofore furnished by petitioner to the defendant, comprises three hydroelectric units of 14,000

horse power each, together with their attendant mechanism and appurtenances necessary to form a working plant, and your petitioner within ten days last past has been informed and believes and upon such information and belief alleges that the plaintiff, George J. Henry, Jr., during the giving of his deposition in this suit on his own behalf, as part of his *prima facie* proofs, contended and claimed that the said patent in suit was of a scope sufficiently broad to cover machinery, devices and mechanisms of the type of the said machinery, devices and mechanisms covered by said contract and so furnished by your petitioner to the City of Angeles under the terms thereof, and, therefore, plaintiff in effect is contending and maintaining in this suit that the use of said three hydro-electric units by the defendant City of Los Angeles will constitute an infringement of said letters patent, No. 695,220.

Your petitioner denies this contention and asserts that the aforesaid machinery, devices and mechanisms do not embody or contain any of the alleged inventions disclosed in or claimed by said letters patent and that the manufacture, sale or use thereof do not constitute an infringement of said letters patent or of any of the claims thereof. Your petitioner also alleges upon its information and belief that the aforesaid letters patent are invalid and of no effect whatever by reason of anticipation, prior use and want of invention, and your petitioner will, if allowed to intervene, offer evidence which will prove the invalidity of said letters patent.

XI.

Your petitioner further shows that it is directly interested in the event of this litigation and will be directly

affected by any decree entered therein, for the reason that if the validity of the said letters patent is sustained and the claims thereof be given the broad construction contended for by plaintiff, then the plaintiff will institute suit against your petitioner for alleged infringement of said letters patent, and your petitioner will be compelled to defend the same and will be put to detriment and disadvantage by reason of the prior adjudication of validity of said letters patent by this court in the above entitled suit.

XII.

And your petitioner further shows, as a reason why it is directly interested in the event of this litigation and should be allowed to intervene therein, that if said patent is sustained and given the scope contended for by plaintiff, as aforesaid, and an injunction granted against the City of Los Angeles, said injunction will be of a general character prohibiting the City of Los Angeles from using any device which may be an infringement of the said letters patent, and will, therefore, run against any such device as well as against the specific device involved in the suit and furnished by the Abner Doble Company, and will consequently prohibit the City of Los Angeles from using the machinery furnished by your petitioner to the City of Los Angeles as hereinabove stated, if the use of said type of machinery is so proved to be an infringement upon the said letters patent, and in such event your petitioner will be subjected to great and irreparable loss, injury and damage by being compelled to indemnify and save harmless the City of Los Angeles from such a decree against it.

For the foregoing reasons it is necessary to the interests of your petitioner that this suit be properly and vigorously defended in the first instance to the end either that the patent be declared invalid or that its claims be given such a limited and restricted construction as not to include your petitioner's said machinery so furnished to the City of Los Angeles.

XIII.

Your petitioner further shows that it is in a better position to defend the said suit than is the City of Los Angeles by reason of the fact that your petitioner has been engaged in this business for a great many years and has in its employ skilled mechanics and engineers of long experience who are thoroughly familiar with the state of the art and are better qualified than any other persons to show what said art is, and to discuss the character of the plaintiff's patent, and to explain it to the Court and to show that there is no infringement thereof by either the Abner Doble Machinery or your petitioner's said machinery.

XIV.

Your petitioner claims that it has a right to intervene and defend this suit by reason of its contract with the City of Los Angeles and to that end has requested the attorney of the defendant in said suit to allow it to join in the defense thereof with the City of Los Angeles by employing and paying therefor its own attorneys and producing as witnesses its skilled mechanics and engineers and other evidence in its possession, but the said attorney has declined and refused such request and will not permit your petitioner's attorneys to join in the defense of said suit or to have any control thereof or take

any part therein, and your petitioner fears that unless it is allowed to intervene all the grounds of defense to said suit will not be presented as fully and completely as they can be by your petitioner and that plaintiff therefore may obtain a decree in his favor to which he would not be entitled if all such defenses were proved, whereby your petitioner will be subjected to great and irreparable injury, loss and damage.

WHEREFORE, your petitioner prays that it may be allowed to intervene in said suit and be made a party defendant therein and be allowed to file an answer to the plaintiff's bill of complaint and to have full charge and control by its attorneys over the issues raised thereby and to fully defend the case in all respects and to such extent as if your petitioner had been originally named as defendant therein, hereby offering and agreeing to conduct such defense at its own cost and without any cost or expense to the City of Los Angeles.

THE PELTON WATER WHEEL CO.

By Edward L. Brayton,

JOHN H. MILLER,

President.

WM. K. WHITE,

Petitioner.

Solicitors and Counsel for Petitioner.

MILLER & WHITE,

Crocker Building, San Francisco, Cal.,

Attorneys for Petitioner.

STATE OF CALIFORNIA,

City and County of San Francisco.—ss.

EDWARD, L. BRAYTON, being first duly sworn, deposes and says that he is the president of The Pelton Water Wheel Company, petitioner, and that he has read the foregoing petition for leave to intervene and knows

the contents thereof; that the same is true to the best of his knowledge, information and belief.

EDWARD L. BRAYTON.

Subscribed and sworn to before me this 3rd day of April, 1914.

GENEVIEVE S. DINELUI,

Notary Public in and for the City and County of San Francisco, State of California.

(Endorsements.)

In the District Court of the United States for the Southern District of California, Southern Division.

GEORGE J. HENRY, JR.,
Plaintiff,

vs.

CITY OF LOS ANGELES,
Defendant,

and

THE PELTON WATER WHEEL COMPANY,
Intervenor.

IN EQUITY, No. A 87.

Amended Answer.

of the Pelton Water Wheel Company, Intervenor in the above entitled suit, to the bill of complaint of George J. Henry, Jr., plaintiff therein.

I.

Now comes the Pelton Water Wheel Company, Intervenor in the above entitled suit and by leave of Court first had and obtained files this its amended answer, and answering the bill of complaint of George J. Henry, Jr., plaintiff in said suit, denies, admits and alleges as follows:

1. That at all times hereinafter mentioned the intervenor was and is a corporation organized and existing under and by virtue of the laws of the State of California and having its principal place of business at the City and County of San Francisco, State of California, and answering paragraph —1— of said bill of complaint intervenor denies that prior to the 13th day of September, A. D. 1900, or at any other time, one Lamar Lyn-

don, mentioned in said paragraph —1—, was the original or first or sole or any inventor of the alleged new and useful electro-mechanical water wheel governor mentioned in said paragraph —1— or of any other device, or that the same was not known or used by others before his alleged invention or discovery thereof, or patented or described in any printed publication in the United States of America or any foreign country before the alleged invention or discovery thereof, or more than two years prior to his application for letters patent thereon in the United States of America, or in public use or on sale in the United States of America for more than two years prior to his said application for letters patent in the United States of America therefor, or not abandoned.

Answering paragraph II of the said bill of complaint, intervenor says that it is without knowledge as to whether or not the said Lamar Lyndon, being the original, first and sole inventor of said alleged electro-mechanical water wheel governor did on September 13, 1900, or on any other day make application in writing in due form of law to the Commissioner of Patents of the United States of America in accordance with the then existing laws of the United States in such cases made and provided or complied in all or any respects with the conditions and requirements of such law, and therefore the defendant leaves plaintiff to make such proof thereof as he may deem necessary and proper. Intervenor admits that on March 11, A. D. 1902, letters patent of the United States, No. 695,220, were granted, issued and delivered by the Government of the United States to the said Lamar Lyndon, but denies on information

and belief that by said letters patent there was granted or secured to him, or his heirs, legal representatives or assigns for the full term of seventeen years or for any term from and after said 11th day of March, 1902, or any other date, the sole or exclusive right, liberty, or privilege, or any right, liberty or privilege to make, use or vend the said alleged invention throughout the United States of America or the Territories thereof, and in this behalf intervenor avers that the said alleged letters patent are invalid and of no effect for the reasons hereinafter stated, and did not confer upon said Lyndon any right, liberty or privilege whatsoever.

And answering paragraph III of the said bill of complaint, intervenor denies that the alleged invention set forth, described, and claimed in and by said letters patent, No. 695,220, was or is of great or any value, or that since the grant and issuance of said letters patent or at any other time the same has gone into great or extensive use or any use. Denies that long prior to the commencement of this suit, but admits that a few days prior thereto, the defendant was notified in writing of the grant and issuance of the said letters patent, No. 695,220, and of the asserted and pretended rights of the plaintiff and his assignor thereunder and that a demand was then made upon defendant to respect the said letters patent and not to infringe thereon, but intervenor denies that notwithstanding such notice the defendant did continue or has continued to make or cause to be made or to use electro mechanical water wheel governors or other devices embodying the alleged invention; and in that behalf avers on information and belief that after receiving said notice the defendant caused an examination to be made of the

said letters patent and of the state of the art connected therewith and found and discovered therefrom that the said letters patent were void and of no effect for various and sundry reasons, and that defendant did not infringe thereon, and notified the plaintiff accordingly.

Answering paragraph IV of said bill of complaint, intervenor denies that the trade and public or either of them have generally or at all respected or acquiesced in the validity or scope of the said letters patent, No. 695,220, or in the alleged exclusive rights of the plaintiff or the plaintiff's assignor therein or thereunder, and denies that save and except for the alleged infringement thereof by defendant or possibly by a limited number of other parties plaintiff and his assignor have or either of them has had or enjoyed the exclusive right, liberty or privilege since March 11, 1902, of manufacturing, selling or using electro-mechanical water wheel governors embodying or containing the alleged invention described and claimed in said letters patent, No. 695,220, or that but for the alleged wrongful and infringing acts of the defendant or possibly a limited number of other parties plaintiff would now continue to enjoy said alleged exclusive rights or that the same are of great or incalculable or any benefit or advantage to plaintiff.

And answering paragraph V of said bill of complaint, intervenor says that it is without knowledge as to whether on July 7, 1913, or at any other time, said Lamar Lyndon by an instrument in writing duly or otherwise executed by him or delivered to the plaintiff, or otherwise, did sell or assign or transfer all or any of the alleged exclusive right, title or interest in and to said invention in electro mechanical water wheel governors, or in or to

or under said letters patent, No. 695,220, or including in any such assignment all or any rights of action, claims or demands of whatsoever or any kind or nature arising out of or accruing from any past infringement of said letters patent, or that said instrument in writing was recorded as required by the statutes or otherwise in the United States Patent Office on the 17th day of September, 1913, or at any other time on page 223 of Transfers of patents, Liber U 93 or elsewhere, and therefore intervenor leaves plaintiff to make such proof of said alleged facts as he may see fit and proper.

Answering paragraph VI of said bill of complaint, Intervenor denies that notwithstanding the premises, or well or otherwise knowing the same, or without the license or consent of plaintiff or plaintiff's assignor, or in violation of the said letters patent or plaintiff's alleged rights thereunder, or otherwise or at all, defendant herein, the City of Los Angeles, has within the four years last past prior to the commencement of the suit or at divers or at any times or at any other time in the Southern District of California, Northern Division, to-wit: in the County of Inyo, State of California, or elsewhere, made or caused to be made or used, or is now making or causing to be made or used, any electro mechanical water wheel governor or governors, or other devices, embodying or embracing the alleged invention described, claimed or patented in and by said letters patent, or has infringed upon the exclusive or any rights alleged to be secured to the plaintiff by virtue of said letters patent, or that any electro mechanical water wheel governor or other device made or caused to be made or used by the defendant was or is an infringement

upon said alleged letters patent, or that each or any of them contains in it the alleged patented invention or that although requested so to do or otherwise, defendant has refused or refuses to cease or desist from the alleged infringement, or ever was or is now making or causing to be made or used any electro mechanical water wheel governor or governors or other device containing or embracing the alleged patented invention or threatens to continue said alleged infringement unless restrained by this court, or has ever realized or is realizing large or any gains, profits or advantages, or that by reason of the premises or of any alleged acts of the defendant, plaintiff has suffered or is suffering great or irreparable or any injury or damage, or that for any alleged wrongs or injuries complained of plaintiff has no speedy or adequate remedy at law or is without remedy save in a court of equity where matters of this kind are properly relievable and cognizable.

II.

And for a further and separate defense and answer to said bill of complaint, intervenor avers that the said Lamar Lyndon was not the original or first inventor or discoverer of any material or substantial part of the thing patented and sought to be claimed and covered in and by the said letters patent, No. 695,220, dated March 11, 1902, but that long prior to the supposed invention or discovery thereof by the said Lamar Lyndon the same was and had been shown, indicated, described and patented in and by the following letters patent of the United States and foreign countries, copies of which letters patent and of each of them were printed and pub-

lished, as printed publications, prior to said Lamar Lyndon's alleged inventions or discovery of the alleged inventions alleged to be described in said letters patent, No. 695,220, to-wit:

UNITED STATES LETTERS PATENT.

No.	Date	Issued to
553,656	Feb. 5, 1895,	Nathaniel Lombard;
587,675	Aug. 3, 1897,	Nathaniel Lombard;
594,632	Nov. 30, 1897,	Nathaniel Lombard;
668,801,	Feb. 26, 1901,	Newton Lamb;
521,085,	June 5, 1894,	S. C. English;
519,597,	May 8, 1894,	E. P. Wetmore.

FRENCH LETTERS PATENT.

No. 291,588, issued August 8, 1899, by the Republic of France to Societe Anonyme des Ateliers de Constructions Mechaniques d'Escher Wyss & Company for Regulable By-Pass for Turbines.

SWISS LETTERS PATENT.

No. 7592, dated and issued on November 4, 1893, by the Swiss Federation to Geo. F. Ramel, of Zurich for "Turbine Inlet".

No. 17,536, dated December 15, 1898, registered on May 15th, 1899, and issued on July 15, 1899, by the Swiss Federation to Irene Schaad for "Device for Automatic Regulation of By-Pass on High Pressure Turbines".

GERMAN LETTERS PATENT.

No. 4,897, dated and issued on January 3, 1896, by the Kingdom of Norway to Frederich Hiorth of Kristiania on "Turbine with Regulating Device, enabling the driving water to circulate freely at all times."

GERMAN LETTER PATENT.

No. 100,353, dated and issued on February 12, 1896, by the Empire of Germany to Frederich W. L. Hiorth. Also No. 93,653, dated and issued on February 12, 1896, by the Empire of Germany to Frederich W. L. Hiorth.

No. 114,121, dated and issued on February 6, 1899, by the Empire of Germany to the Machine Works of Escher Wyss & Co. of Zurich, for "Positively Controlled by-pass for Turbines".

III.

And for a further and separate defense and answer to said bill of complaint, intervener avers that the said Lamar Lyndon was not the original or first or any inventor or discoverer of any material or substantial part of the thing or device sought to be claimed and covered in and by the said letters patent, No. 695,220, dated March 11, 1902, but that long prior to the supposed and alleged invention or discovery thereof by the said Lyndon, the same, and every material and substantial part thereof was fully described, disclosed, indicated and shown in each of the following printed publications, each of which was printed and published long prior to the said alleged invention or discovery by the said Lyndon, to-wit:

PRINTED PUBLICATIONS.

The issue of "Schweizerische Bauseitung", which was a weekly printed publication issued and published weekly during all the times hereinafter referred to in respect to the weekly issues thereof, which particular issue comprised No. 8 of Volume IX of said publication, and said No. 8 was printed and published at the City of Zurich,

Switzerland, on February 19, 1887, and particularly that portion of said issue No. 8 describing the Terni plant.

The issue of said "Schweizerische Bauzeitung" which issue was printed and published at said City of Zurich on July 27, 1895, and which issue comprised No. 4 of Volume XXVI of said publication and particularly that portion of said issue No. 4 describing the Davos Power Plant.

The issues of said "Schweizerische Bauzeitung" which were respectively printed and published at said City of Zurich in the year 1896, and which issues comprised Numbers 20, 21, 22, 23, 24, 25 and 26 of Volume XXVIII of said publication.

The issue of said "Schweizerische Bauzeitung" which was printed and published at said City of Zurich on July 10, 1897, and which issue was numbered 8 of said publication and particularly that portion of said issue describing the Sihlwerke plant.

The issues of said "Schweizerische Bauzeitung" which were printed and published at said City of Zurich during the year 1897 and comprised Numbers 1 to 26 inclusive of Volume XXIX of said publication.

The issue of said "Schweizerische Bauzeitung" which was printed and published at said City of Zurich on May 7, 1898, and particularly that portion of said issue describing the Gornergrat plant.

The issue of said "Schweizerische Bauzeitung" which was printed and published at said City of Zurich on December 10, 1898, and particularly that portion of said issue describing the Arosa plant.

The issue of said "Schweizerische Bauzeitung" which was printed and published at said City of Zurich on June

24, 1899, and which issue was Number 25 of Volume XXXIII of said publication, containing on pages 231 and 232 an article by Albert Hiorth entitled "Combined Turbine and By-pass Regulation System".

The issue of said "Schweizerische Bauzeitung" which was printed and published at said City of Zurich on April 21, 1900, and particularly that portion of said issue describing the Bex plant.

The issue of said "Schweizerische Bauzeitung"* which was printed and published on November 14, 1896, and which issue was number 20 of Volume XXVIII of said publication, and particularly that portion of said issue describing Turbines and Governors at the Swiss National Exposition at Geneva.

The issue of said "Schweizerische Bauzeitung" which was printed and published at said City of Zurich on November 21, 1896, and which issue was Number 2 of Volume XXVIII, and particularly that portion of said issue describing exhibits of Theodor Bell & Co. in Kriens at the Swiss National Exposition at Geneva.

The issue of said "Schweizerische Bauzeitung" which was printed and published at said City of Zurich on December 5, 1896, and which issue was Number 23 of Volume XXVIII and particularly that portion of said issue describing on page 162 the turbines and governors at the Swiss National Exposition in Geneva in 1896 and four high pressure turbines for Water Power Plants in Geneva and Chevres and a turbine for the completion of the plant at Davos.

Volumes I and II of Part Two of a printed publication entitled "Theory and Construction of the Turbines and

Water Wheels'' by G. Meissner, engineer, second edition revised by Engineer Nowak, President of the Technical School in Altenberg, forming the second part of the works entitled ''Hydraulics and the Hydraulic Motors'' which second and revised edition was printed and published by Herman Costenoble in October, 1895, in Jena, Germany, and particularly that portion of Volume II commencing on page 727 thereof describing an 180 horse power turbine plant in Tiefenstein, Baden, built by Theodor Bell & Co. of Kriens, Switzerland, and also in said Volume II the plate XXVI, and figures 4 and 5 thereof, illustrating said installation at Tiefenstein.

The issue of ''LeGenie Civil'', which was a publication printed and published weekly at the City of Paris, France, which particularly weekly issue thereof was printed and published at said City of Paris on November 18, 1899, and particularly the portion of said issue, commencing on page 45 and entitled ''Discharge Regulator for Turbines.''

The issue of the Journal of Electricity, which was a printed publication issued monthly during all the times hereinafter referred to in respect to the monthly issues thereof, which issue was printed and published at the City and County of San Francisco, U. S. A. in August 1896, and comprised No. 2 of Volume III of said publication and particularly that portion of said issue No. 2 commencing on page 28 thereof and entitled ''Water Wheel Regulation''.

The issue of said ''Journal of Electricity'' which issue comprised No. 5 of Volume IV of said publication and was printed and published at said City of San Fran-

cisco in August, 1897, and particularly that portion of said issue No. 5 commencing on page 85 and entitled "The Bakersfield Transmission".

The issue of said "Journal of Electricity" which issue comprised No. 6 of Volume IV of said publication and was printed and published at said City of San Francisco in September 1897, and particularly that portion of said issue No. 6, commencing on page 109 thereof and entitled "Water Wheel Government."

The issue of "Cassier's Magazine" which was a printed publication issued monthly, which issue was printed and published at the City of New York, U. S. A. in November, 1899, and comprised No. 1 of Volume XVII of said publication and particularly that portion of said No. 1, commencing on page 3 thereof and entitled "An 83 Mile Electric Power Transmission Plant" by James A. Lighthipe.

The issue of the "Electrical World and Engineer" which was a printed publication issued weekly, which issue was printed and published at the City of New York, U. S. A. on November 24, 1900, and particularly that portion of said issue commencing on page 799 and entitled "Electric Power on the Comstock Lode" by Wynn Meredith and Wyatt H. Allen.

IV.

Further answering intervenor alleges that prior to the alleged invention by said Lyndon of the devices and mechanisms described in and claimed by said Lyndon patent in suit and more than two years prior to the filing of the application for said patent, the said devices and mechanisms and substantially the same things described in and

claimed in said letters patent in suit and each of them had been and were in public use and were being publicly used by and were known to each of the following named parties at the following named places, to-wit:

Power Development Company (a corporation) at its hydro-electric plant on the Kern River near Bakersfield in Kern County, California.

Truckee River General Electric Co. (a corporation) at its plant near the town of Floriston in the State of California.

Mammoth Bar Mining Company at its plant on the American River near Auburn in the State of California.

Southern California Power Company at its plant, known as the Santa Ana River No. 1 plant, located near Crafton, California, on the Santa Ana River, and which plant is now controlled and owned by the Southern California Edison Company.

Further answering intervenor alleges that prior to the alleged invention by the said Lyndon of the devices and mechanisms described in and claimed in said Lyndon patent, in suit, and more than two years prior to the filing of the application for said Lyndon patent, devices and mechanism described in and claimed in said Lyndon patent in suit, and more than two years prior the said devices and mechanism and substantially the same things described in and claimed in said Lyndon patent had been and were on public sale and were being publicly sold at the Cities of Boston and Ashland, Massachusetts, and elsewhere in the United States by the Lombard Water Wheel Governor Company of Boston, Massachusetts, and of said City of Ashland.

V.

Further answering, defendant alleges that said Lamar Lyndon was not the original, or first inventor or discoverer of the alleged inventions, devices, or mechanism described in and claimed by said letters patent, No. 695,-220, or of any material or substantial part thereof, but that said alleged inventions and said devices and mechanisms and every material and substantial part thereof, long prior to the alleged invention thereof by the said Lyndon and more than two years prior to the filing of the application for said letters patent, were known to and publicly used by each of the following named persons whose respective places of residence are respectively set opposite their respective names and that such public use thereof by each of said hereinafter named persons was at the plant known at different times as the "Mammoth Bar Gold Mining Company" power plant and "Davis Gold Mining Company" power plant, and which power plant was at all said times and now is located in El Dorado County, California, on the Middle Fork of the American River, about six miles from Auburn, Placer County, California, and that said plant and said devices so used therein during said use thereof, were owned by W. F. Davis, deceased, who formerly resided at Auburn, California, and said plant and said devices, so used therein, are now owned by Ellen F. R. Davis, the widow of said W. F. Davis:

Mammoth Bar Gold Mining Co., Auburn, Placer Co., Cal.

Davis Gold Mining Co., Auburn, Placer Co., Cal.

W. F. Davis, Auburn, Placer Co., Cal.

Howard W. Davis, Auburn, Placer Co., Cal.

Fred S. Roumage, Auburn, Placer Co., Cal.

Burton C. Van Emon, San Francisco, Cal.

S. L. Berry, Sunnyvale, Santa Clare Co., Cal.

Ellen F. R. Davis, Auburn, Placer Co., Cal.

VI.

And for a further and separate defense, intervenor avers that for the purpose of deceiving the public the description and specifications filed by the patentee Lyndon in the Patent Office of the United States, upon which the said letters patent, No. 695,220, were issued, was made to contain less than the whole truth relative to the alleged invention and discovery and more than was necessary to produce the desired effect in that a device constructed in accordance with the said description and specification and the directions contained therein is and would be wholly inoperative and incapable of producing the desired effect or any useful effect whatever, and is and would be wholly worthless and of no utility whatever, and in that behalf the said patentee in and by his said specification has given a long, intricate and involved description of his alleged invention clothed in vague, shadowy and nebulous terms whereby the public would be induced to the conclusion that said patent involved some intricate, difficult and mysterious principle without knowing exactly and precisely what the same is, or how to avoid it during the life of the patent or to practice it after the expiration of the patent.

VII.

And for a separate and further defense, this intervenor alleges that the said Lamar Lyndon surreptitious-

ly and unjustly obtained the letters patent in suit, No. 695,220, dated March 11, 1902, for that which in fact was first invented and discovered by another, to-wit: Wynn Meredith, a resident of San Francisco, California, who at all times was using and exercising reasonable diligence in adapting and perfecting the same.

This intervenor further alleges that said Lamar Lyndon was not the original or first inventor or discoverer of any material or substantial part of the device patented in and by said letters patent No. 695,220, but on the contrary, said Lynn Meredith, who resides in the City of San Francisco, State of California, U. S. A., was the first and original inventor and discoverer of the said device and of every material part thereof, and the said Meredith, prior to Lyndon's alleged invention thereof reduced said invention to practice by embodying same in a hydro-electric plant which was, prior to Lyndon's said alleged invention, completed for and used by the Truckee River General Electric Co. near Floriston, California.

VII.

And for a separate and further defense, this intervenor alleges that the said Lamar Lyndon surreptitiously and unjustly obtained the letters patent in suit, No. 695,220 dated March 11, 1902, for that which in fact was first invented and discovered by another, to-wit: Nathaniel Lombard, a resident of Worcester, Massachusetts, U. S. A., who at all times was using and exercising reasonable diligence in adapting and perfecting the same.

This intervenor further alleges that said Lamar Lyndon was not the original or first inventor or discoverer

of any material or substantial part of the device patented in and by said letters patent, No. 695,220, but on the contrary, said Nathaniel Lombard, who resides in said City of Worcester, Massachusetts, U. S. A., was the first and original inventor and discoverer of the said device and of every material part thereof, and the said Lombard, prior to Lyndon's alleged invention thereof, reduced said invention to practice by embodying same in hydro-electric plant which was, prior to Lyndon's said alleged invention, completed for and used by the Honk Falls Power Company, at Ellenville, State of New York, U. S. A.

IX.

And for a separate and further defense, this intervenor alleges that the said Lamar Lyndon surreptitiously and unjustly obtained the letters patent in suit, No. 695,220, dated March 11, 1902, for that which in fact was first invented and discovered by another, to wit: Wyatt H. Allen, a resident of San Francisco, California, U. S. A., who at all times was using and exercising reasonable diligence in adapting and perfecting the same.

This Intervenor further alleges that said Lamar Lyndon was not the original or first inventor or discoverer of any material or substantial part of the device patented in and by said letters patent, No. 695,220, but on the contrary, said Wyatt H. Allen, who resides in San Francisco, California, U. S. A., was the first and original inventor and discoverer of the said device and of every material part thereof, and the said Allen, prior to Lyndon's alleged invention thereof reduced said invention to practice by embodying same in a hydro-electric plant

which was, prior to Lyndon's said alleged invention completed for the Truckee River General Electric Co., near Floriston, California.

X.

And for a separate and further defense, intervenor avers that the said alleged invention sought to be patented and claimed in and by said letters patent is of no utility whatever and that the same has never been put into practical use either by the patentee Lyndon or the plaintiff herein or by any other person, but that the said letters patent is purely a paper patent of no substantial value or utility and is now being used by the plaintiff for the purpose of harassing, worrying and annoying the defendant in its business operations and thereby endeavoring to compel the defendant to pay to the plaintiff a large sum of money in order to free itself from this litigation.

XI.

And for a separate and further defense, Intervenor avers that by reason of the state of the art existing at the time of the alleged invention of the patentee Lyndon, the device described and claimed and covered in and by said letters patent was not an invention and did not require or involve an exercise of the inventive faculty for its production, for which reason the said alleged letters patent are null, void and of no effect.

XII.

And for a separate and further defense this intervenor alleges that the said Lamar Lyndon surreptitiously and unjustly obtained the patent in suit, No. 695,220, dated March 11, 1902, for that which in fact

was invented by another, to-wit: Newton Lamb, of Yreka, Siskiyou County, California, who was using reasonable diligence in adapting and perfecting the same.

XIII.

And for a further and seperate defense, this intervenor alleges that the said Lamar Lyndon was not the original or first inventor or discoverer of any material or substantial part of the thing patented in and by letters patent, No. 695,220, dated March 11, 1902, but on the contrary, one Newton Lamb of Yreka, Siskiyou County, California, was the first and original inventor and discoverer of the said device having invented and discovered the same prior to the supposed invention or discovery thereof by the said Lyndon, and after having invented and discovered the same, the said Newton Lamb on April 2, 1900, filed an application for a patent for said invention in the Patent Office of the United States, and after he had filed said application, the said Lamar Lyndon, on September 13, 1900, filed an application for letters patent of the United States for a patent on the same thing and by some means unknown to intervenor induced the officials of said Patent Office to issue to him the said patent, No. 695,220, on March 11, 1912, notwithstanding the fact that the said Lamar Lyndon was not the original and first inventor of the thing so patented.

WHEREFORE, intervenor prays judgment that the complaint be dismissed and costs awarded to the defendant and intervenor.

MILLER & WHITE.

J. H. MILLER and WM. K. WHITE,

Attorneys and Solicitors for Intervenor.

(Endorsements.)

*In the United States District Court, Southern District of
California, Southern Division.*

GEORGE J. HENRY, JR., Complainant,

vs.

THE CITY OF LOS ANGELES, Defendant.

IN EQUITY. No. A 87.

Petition for Order Allowing Appeal.

George J. Henry, Jr., complainant in the above-entitled cause, conceiving himself aggrieved by the final Order and Decree filed and entered on the 17th day of January, 1916, in pursuance of the decretal order of January 10, 1916, in the above-entitled cause, whereby it was ordered, adjudged and decreed that the bill of complaint in this cause be, and the same was thereby dismissed, for want of equity at the costs of the complainant,—now comes Raymond Ives Blakeslee, Esq., Solicitor for complainant, and petitions said Court for an order allowing the complainant, George J. Henry, Jr., to prosecute an appeal from said final Order and Decree and the decision of the Court thereupon, and from the whole thereof, to the Honorable The United

States Circuit Court of Appeals for the Ninth Circuit, for the reasons specified in the Assignment of Errors which is filed herewith, under and according to the laws of the United States in that behalf made and provided; and also that an order be made fixing the amount of security which complainant shall give and furnish upon such appeal; and that a citation issue as provided by law, and that a certified transcript of the records, proceedings and papers upon which said Decree was based be forthwith transmitted to the United States Circuit Court of Appeals for the Ninth Circuit, in accordance with the rules in equity promulgated by the Supreme Court of the United States and the statutes made and provided together with the exhibits on file in this case or duly certified copies thereof.

And your petitioner will ever pray.

(Signed) RAYMOND IVES BLAKESLEE,
Solicitor for Plaintiff.

[TITLE OF COURT AND CAUSE.]

Order Allowing Appeal.

In the above-entitled cause the complainant having filed his petition for order allowing an appeal from the order of this Court made and entered January 17, 1916, together with Assignment of Errors:

Now upon motion of Raymond Ives Blakeslee, Esq., Solicitor for complainant, it is ordered that said appeal be, and hereby is allowed to complainant, to the United States Circuit Court of Appeals for the Ninth Circuit, from the said order or decree made and entered by this

Court in this cause on January 17, 1916, that the bill of complaint in this cause be, and was thereby dismissed for want of equity at the costs of complainant; and that the amount of complainant's bond on said appeal be, and the same is hereby, fixed at the sum of two hundred fifty dollars (\$250.00).

IT IS FURTHER ORDERED, that upon the filing of such security a certified transcript of the records and proceedings herein be forthwith transmitted to said United States Circuit Court of Appeals for the Ninth Circuit, in accordance with the rules in equity by the Supreme Court of the United States promulgated, and in accordance with the statutes made and provided, together with the exhibits on file in this case or duly certified copies thereof.

Dated July 3rd, 1916.

(Signed)

TRIPPET,
Judge.

[TITLE OF COURT AND CAUSE.]

Assignment of Errors.

Comes now the complainant above named and specifies and assigns the following as the Errors upon which he will rely upon his appeal to United States Circuit Court of Appeals for the Ninth Circuit, from a decree or order of this Court of January 17, 1916:

I.

That the District Court of the United States for the Ninth Circuit, Southern District of California, Southern Division, erred in entering any decree in favor of defendant;

II.

That said Court erred in ordering and adjudging and decreeing that the bill of complaint in this cause be, and that the same was, thereby dismissed for want of equity, either with or without cost to defendant;

III.

That said Court erred in not finding and decreeing that the Letters Patent sued on are good and valid in law;

IV.

That said Court erred in not finding and decreeing that the Letters Patent sued on are infringed;

V.

That said Court erred in not finding and decreeing that Lamar Lyndon, the patentee of the Letters Patent sued on, was the original, true, first and sole inventor of the invention disclosed and claimed in and by the Letters Patent sued on;

VI.

That the Court erred in not finding and decreeing that the complainant George J. Henry, Jr., is and was at the time of commencement of this action in equity the sole owner of all the right, title and interest in, to and under said Letters Patent sued on, and in and to the invention in said Letters Patent sued on disclosed and described and claimed;

VII.

That said Court erred in not finding and decreeing that the Letters Patent sued on are not anticipated and therefore disclose and describe and claim an invention novel at the time Lamar Lyndon the patentee of the Letters Patent sued on applied for such Letters Patent sued on;

VIII.

That said Court erred in not finding and decreeing that the Letters Patent sued on are not anticipated and therefore disclose and describe and claim an invention novel at the time Lamar Lyndon the patentee of the Letters Patent sued on made the invention disclosed and described and claimed in said Letters Patent sued on;

IX.

That the Court erred in not finding the Letters Patent sued on to be for a pioneer invention or for an invention which introduced within the art of water-wheel governing revolutionary factors and agencies and means capable of practicable embodiment in either mechanical or hydraulic or electrical or other forms or any forms in part mechanical or in part hydraulic or in part electrical, and by which such sweepingly revolutionary factors the art of water-wheel governing, particularly in plants for the generation of electrical energy, was given a tremendous impetus and advance which conferred great benefits upon mankind;

X.

That the Court erred in not finding that the so-called Power Development Company of Bakersfield defense was an entirely abandoned and unsuccessful experiment;

XI.

That the Court erred in not finding that the so-called Power Development Company of Bakersfield defense, assuming it to have been in any sense complete or operative, failed to embody the invention disclosed and described and claimed in the Letters Patent sued on;

XII.

That the Court erred in not finding that each of the Letters Patent urged by defendant as anticipatory of the Letters Patent sued on or as showing the state of the art prior to the date of application of the Letters Patent sued on, either inclusive or exclusive of the French and Swiss patents which the Court ruled out of evidence as not properly proven or identified, was in effect a mere paper showing and did not disclose the invention disclosed and described and claimed in the Letters Patent sued on;

XIII.

That the Court erred in not holding that the Letters Patent sued on clearly and fully disclose and describe and claim an invention in every material respect practicable and operative;

XIV.

That the Court erred in holding that the invention claimed in the Letters Patent sued on is only for an electrical-mechanical water-wheel governor;

XV.

That the court erred in not finding that the Letters Patent sued on are infringed by the defendant's alleged infringing devices and mechanisms and apparatus located upon the line of the Los Angeles Aqueduct in the County of Inyo, California;

XVI.

That the Court erred in holding that the Letters Patent sued on are in effect a "paper patent" irrespective of its broad and comprehensive claims and its pioneer position in the art, and irrespective of the plain and clear

terms of the grant made by the Government of the United States pursuant to statute and in favor of the patentee of the Letters Patent sued on;

XVII.

That the Court erred in holding that the broad claims of the Letters Patent sued on must be limited in scope and meaning and comprehensiveness to any of the specific details of construction an inter-relation and operation of parts and features disclosed and described in the drawings and specification of the Letters Patent sued on, or to any strictly mechanical equivalents of the same;

XVIII.

That the Court erred in holding that the alleged infringing devices and mechanisms and apparatus of defendant are not in construction and inter-relation of parts and features clearly the mechanical equivalents of the corresponding parts and features described and disclosed in the Letters Patent sued on and within the broad language of the claims of the Letters Patent sued on and within a fair interpretation thereof and a fair consideration of the scope and importance and position in the art of the invention as claimed in the Letters Patent sued on;

XIX.

That the Court erred in holding that the licenses taken under the Letters Patent sued on do not carry much weight as to the utility of the invention;

XX.

That the Court erred in not holding that the licenses taken under the Letters Patent sued on reflect highly and tend to establish the utility and novelty and prac-

ticability and value of the invention disclosed and described and claimed in the Letters Patent sued on and the validity of such Letters Patent sued on;

XXI.

That the Court erred in holding that the patentee of the Letters Patent sued on, or his assignee the complainant George J. Henry, Jr., is chargeable in any respect with laches in connection with the Letters Patent issued to Lombard for the so-called automatic control feature of defendant's mechanism, or in connection with any proceeding which might have been taken with respect to this later invention or the Letters Patent therefor;

XXII.

That the Court erred in not finding that the specification of the Letters Patent sued on fully and clearly discloses an invention in water-wheel governing in broad and significant language and without limitation to specific embodiment of any kind whatsoever;

XXIII.

That the Court erred in not finding that the inverse relation between the water-wheel gate and the by-pass valve in the water-wheel governing mechanism as broadly claimed in the Letters Patent sued on, was in its broadest aspects of the pith of the invention of the Letters Patent sued on, within the meaning of the Paper Bag case, 210 U. S. 405;

XXIV.

That the Court erred in not applying the doctrine of the Paper Bag case, 210 U. S. 405, and of other cases relied upon by complainant, so as to find for complainant on the question of infringement;

XXV.

That the Court erred in holding in effect that infringement may be avoided by changing form without changing or departing from the real substance of the invention;

XXVI.

That the Court erred in not finding that Lamar Lyndon, patentee of the Letters Patent sued on, diligently and as far as permitted within his means notified the infringers or threatening infringers of his Letters Patent and attempted to bring such infringers to terms and obtain recognition of the Letters Patent sued on and to obtain assistance in the manufacture of mechanism and apparatus embodying the invention of the Letters Patent sued on in one form or another;

XXVII.

That the Court erred in not finding that the invention described and disclosed and claimed in the Letters Patent sued on went almost immediately into use in various forms, one of which forms was that installed by defendant as complained of herein;

XXVIII

That the Court erred in holding that the defendant's device is wholly or in any manner unlike the conception of the Lyndon patent sued on as to the principle or operation and mechanical construction, and whether considered as a whole or when separated into elements;

XXIX.

That the Court erred in holding that the defendant's device is very much like the machine called in the record the "Bakersfield Device," while holding that the "defendant's device has been highly successful from the

time of its installation, and since then has been actually producing the useful result claimed for the Lyndon patent," namely, the Letters Patent sued on;

XXX.

That the Court erred in holding that the doctrine of "paper patent" while pertaining to the anticipation of Letters Patent sued on, can be applied to Letters Patent themselves sued on so as to produce a voiding of the grant of the Letters Patent and in effect an arbitrary cancellation or limitation of the claims of the Letters Patent sued on and an avoidance and disregard of the fair meaning and terms of the claims of the Letters Patent sued on;

XXXI.

That the Court erred in holding that the failure of the Patent Office to declare an interference, assuming such could properly be declared, between the Lombard Patent for the automatic control in the defendant's device or the application thereof and the Letters Patent sued on or the application thereof, "amounts to a declaration of the patent office that the defendant's automatic control is not an equivalent of the automatic control of the Lyndon patent;"

XXXII.

That the Court erred in not finding that the frictionless type of by-pass valve might be read into the claims of the Letters Patent sued on or certain of the same, if desired, in order to find infringement;

XXXIII.

That the Court erred in not finding that the printed publication concerning the Bakersfield device, namely,

The Journal of Electricity, was merely the partial disclosure of a useless and abandoned experiment and therefore of no higher order of evidence than the thing purported to be described and disclosed in such article;

XXXIV.

That the Court erred in holding that "the Lyndon patent proposed to control the velocity of the wheel in both directions—that is to say, make it speed up and make it slow down, while the defendant's device primarily is intended only to take the pressure off the wheel, and thereby tend to make it slow down;"

XXXV.

That the Court erred in holding that the defendant's device cannot be an improvement upon the Letters Patent sued on for the reason that said Letters Patent fail specifically to claim a frictionless type of valve;

XXXVI.

That the Court erred in holding that the defendant's device was not manifestly a copy of the complainant's device while admitting substitution for features in the latter of features in the former, and in contending that the "whole conception of the alleged infringing device, and all its elements, are different," and that the machines "are intended to operate on a different principle;"

XXXVII.

That the Court erred in holding that the complainant has not sustained the claim of infringement;

XXXVIII.

That the Court erred in holding that complainant's device is the device specifically pictured and described in

the drawings of the Letters Patent sued on, and ignoring the multiplicity of forms possible within the broad claims of said Letters Patent.

In order that the foregoing Assignments of Error may be made of record, the complainant presents the same to the Court and petitions that disposition may be made thereof in accordance with the laws of the United States thereunto provided.

WHEREFORE, the said complainant prays that the said decree and order of this Court made and entered on January 17, 1916, that the bill of complaint in this cause be dismissed, and dismissing the same, for want of equity, at the costs of complainant, be reversed, in part and in whole, and that the United States District Court for the Southern District of California, Southern Division, be directed to enter an order setting aside in entirety the order and decree of January 17, 1916, and be directed to proceed to grant the relief and do equity as prayed for in the bill of complaint in this cause.

Respectfully submitted,

(Signed)

RAYMOND IVES BLAKESLEE,
Solicitor and of Counsel for Complainant.

Conclusions of the Court.

This is a suit in which the complainant claims that the defendant is infringing a patent owned by the complainant, and granted to one Lamar Lyndon. The patent was granted for an Electromechanical Water-Wheel Governor. It will not be necessary for the Court to describe fully this patent, or the claims made in it. The purposes which were sought to be accomplished by the invention are described in a general way in the first para-

graph of the specifications, as follows:

“The governors at present employed to regulate the water-supply to the water-wheel in general simply operate to open or close the water-wheel gate, thereby allowing of the admission of a greater or less supply of water. Now, the first effect of such opening or closing of the gate, owing to the inertia of the water, is always the opposite to that which it is desired to bring about—i. e. the opening of the gate operating to momentarily cause less velocity of water at the wheel, owing to the greater orifice the water has to flow through, and, vice versa, the closing of the gate operating to momentarily cause an increase of velocity, owing to the contraction of the orifice. Moreover, these contrary effects will last until the changed conditions can be imparted to the source of supply of water.”

Complainant contends that the evidence shows that the defendant is infringing the complainant's patent and that it is not necessary to resort to the doctrine of equivalents in order to determine this infringement. The complainant contends that the Lyndon patent in controversy is a primary and pioneer patent; that it is so broad in scope and entitled to such broad interpretation that the claims therein may be read upon the structures of the defendant so as to show infringement regardless of the doctrine of equivalents. The broadest claim in the Lyndon patent is as follows:

“6. In a water-wheel governor, the combination with means for operating the water-gate in either direction, a by-pass for the water-wheel, and a valve

controlling said by-pass, of means connected to the water-gate-operating means and operating the by-pass valve inversely to the operation of the water-gate.”

The complainant urges that this claim covers any mechanical means connected with the water-gate-operating means, and operating the by-pass valve inversely to the operation of the water-gate. He contends that the word means is so broad in its scope that it embraces any mechanism that will accomplish the result claimed for his patent. In support of this contention complainant cites the Paper Bag case, 210 U. S. 405; Reis et al. vs. Barth Manufacturing Company, 136 Fed. 850; Arnold vs. Tyden, 193 Fed. 410; Davis Sewing Machine Company vs. New Departure Manufacturing Company, 217 Fed. 775.

In order to understand the Paper Bag case as it is claimed to apply to the question before the court, we will quote a few sentences from it:

“It may be well before considering these contentions to refer again to the view which the Circuit Court and the Circuit Court of Appeals had of Liddell’s patent. The Circuit Court said that the “pith” of the invention “is the combination of the rotary cylinder with means for operating the forming place in connection therewith, limited, however, to means which cause the place to oscillate about its rear edge on the surface thereof,” and distinguished the invention from the prior art, as follows:

“Aside from the cylinder and the forming plate oscillating about its rear edge everything in these claims (the claims of the patent) is necessarily old in the arts.” It

was this peculiar feature of novelty, it was said, which clearly distinguished it from all that went before it. This conclusion was in effect affirmed by the Circuit Court of Appeals. * * * * The Court, as we have seen concluded from the character of the Liddell patent, that "the second method", that is, the method of the Continental Company's machine, was "*within the doctrine of equivalents.*"

Counsel, however, contends that the Circuit Court, in its decision, virtually gave Liddell a patent for a function by holding that he was entitled to every means to *cause the forming plate to oscillate about its rear edge.*

The distinction between a practically operative mechanism and its function is said to be difficult to define. Robinson on Patents, Sec. 144, et. seq. It becomes more difficult when a definition is attempted of a function of an element of a combination which are the means by which other elements are connected and by which they coact and make complete and efficient the invention. But abstractions need not engage us. *The claim is not for a function, but for mechanical means to bring into working relation the folding plate and the cylinder. This relation is the very essence of the invention, and marks the advance upon the prior art. It is the thing that never had been done before, and both the lower courts found that the machines of the Continental Company were infringements of it. It is not possible to say that the findings of those courts on that fact or on the fact of invention were clearly wrong, notwithstanding the great ability of the argument submitted against them.*"

It is plain to be seen from the quotation made and a

careful reading of the Paper Bag case, that that case is decided upon the doctrine of equivalents. The Court gave to the invention a broad interpretation in that regard. All the subsequent cases relied upon are based upon that case, and none of the cases hold what is contended for by complainant. The true interpretation of the word "means" used in the patent is found in the case of *Arnold vs. Tyden*, *supra*, wherein the Court says:

"Since the decision referred to, the Supreme Court, in the Paper Bag case, 210 U. S. 405, 28 Sup. Ct. 748, 52 L. Ed. 1122, has considered the question of functional claims, and held that claims for means are valid *where the specifications clearly disclose the particular means or mechanism having the function indicated in the claims.*"

From these decisions it is plain that in construing the word "means" in the patent, there are two effects to be given to it. When the word is used simply to describe connecting parts that bring into working relation the real elements of the machine, the word should have the broadest significance in the application of the doctrine of equivalents; but where the word is used to describe the real working elements of the patent, it must be limited to the disclosures in the patent and to such equivalents thereof as are justified by the relation which the invention bears to the state of the art. If the word means in the patent is designed to have a greater significance than the disclosures in the patent—that is to say, the specific device disclosed and the equivalents thereof—then the patent would be for a function. The only way to uphold the use of the word means in a patent is to con-

strue it as above stated. Any other construction would make the patent void.

In determining what an equivalent is we must look at the machines, or their several devices or elements, in the light of what they do, or what office or function they perform and how they perform it. It is not safe to give much heed to the fact that the corresponding devices in two machines organized to accomplish the same result, are different in shape or form the one from the other, as it is necessary in every such investigation to look at the mode of operation or the way the devices work, and at the result as well as the means by which the result is attained. We should pay special attention to such portions of the device as really do the work so as not to give undue importance to other parts of the same which are only used as a convenient mode of constructing the entire device.

In this regard it is appropriate to take a general view of the situation and determine the positions occupied by the invention and the alleged infringing device, in the state of the art.

The statute requires that every patent shall contain a short title or description of the invention or discovery correctly indicating its nature and design. Lyndon, in complying with this statute, named his patent "Electro-mechanical Water-Wheel Governor."

The application for this patent was filed September 30, 1900, and it was granted March 11, 1902. In a brief for complainant it is said:

"Lyndon approached many companies manufacturing governors in the attempt to get them to manufacture un-

der his patent, or recognize it, covering a period from nearly four years prior to the grant of the patent up to shortly before the time negotiations commenced with complainant to buy the patent."

These negotiations were shortly before the commencement of this suit.

The evidence supports this claim of complainant. Probably the best evidence that a device is for a new and useful invention is that it goes into instant and general use. The fact that a device does not go into instant and general use is, at least, some evidence that it is not a new and useful invention. There never has been a machine manufactured like that described in this patent. No machine has ever been manufactured under and in pursuance of it. No license was ever issued for any machine to operate under it prior to the commencement of this suit. Since the commencement of this suit licenses have been issued under the patent, but these licenses were issued under such circumstances that they do not carry much weight as to the utility of the invention. The defendant has attacked the patent by expert testimony, and the witnesses testified that the alleged invention of Lyndon is not a practical machine and will not work. The evidence shows, unquestionably, that the Lyndon invention will not work if the mercury cups are used as disclosed in the patent without change.

The defendant's device was installed early in the year of 1909. It is wholly unlike the conception in the Lyndon patent as to the principle of operation and mechanical construction, and this is true whether considered as a whole, or when separated into elements. It is very much

like the machine called in the record the "Bakersfield device." This Bakersfield device was described in a printed publication, namely,—The Journal of Electricity, in September, 1897. The defendant's device has been highly successful from the time of its installation, and since then has been actually producing the useful result claimed for the Lyndon patent.

In a brief filed on behalf of complainant, it is argued as follows:

"* * * we wish to show to the court a little more particularly that the other prior patents set up, namely, English, Wetmore, Escher-Wyss and Schaad, were not shown ever to have been put, as to their subject matter, into practical operation or effect, and are, therefore, what is known in patent law as mere "paper patents."

The brief in argument states that "such patents reflect nothing more than academic attempts to do something which, as far as the record shows, never was done."

* * * "It was held in a leading case in this very circuit, by the Circuit Court of Appeals, in an opinion filed October 3, 1910, namely, in Kings County Raisin & Fruit Co. et al. v. United States Consolidated Seeded Raisin Co., 182 Fed. 59, that a patent for the first successful machine to accomplish a new and useful result is not anticipated or limited by a mere paper patent granted years before, although it discloses a theoretically successful machine, such a patent having no place in the prior art." The brief then quotes from the decision the following:

"The Crosby invention undoubtedly anticipates and describes the whole theory of the Pettit patent; but it does not appear ever to have been put to use, and there

is no evidence that any machine was ever constructed under it. It is one thing to invent the theory of a machine; it is quite another thing to invent a successfully operating machine. * * * It is probably unnecessary in this appeal to determine just what effect should be given to the Crosby patent as limiting the scope of the patented invention. It would seem that it was one of those unsuccessful or abandoned inventions which are held to have no place in the art to which they relate. In an analogous case Mr. Justice Brown said: “ ‘His efforts in that direction must be relegated to the class of unsuccessful and abandoned experiments which, as we have repeatedly held, do not affect the validity of a subsequent patent.’ ” *Deering v. Winona Harvester Works*, 155 U. S. 286, 15 Sup. Ct. 118-124, 39 L. Ed. 153.

“In any view, the Pettit being the first successful machine to accomplish a new result, the claims of the patent are clearly entitled to a broad and liberal construction and to the benefit of the doctrine of equivalence.”

The argument thus made by complainant concerning the patents in the prior art, applies to the foregoing facts concerning the patent in suit and defendant's device, notwithstanding that defendant's machine has never been patented. The defendant has a successful machine; complainant has a patent or an idea or theory. Under such circumstances complainant is not entitled to that liberal application of the rule of equivalents that a patent is entitled to where the invention was the first to produce a new and useful result.

Shortly after the issuance of the Lyndon patent, a patent was issued upon what, in the argument, was called

the automatic control in use by the defendant. This patent upon this automatic control was issued on the 18th day of March, 1902. The issuance of this patent, of course, would not prevent the claim of infringement, but it amounts to a declaration of the patent office that the defendant's automatic control is not an equivalent of the automatic control in the Lyndon patent, and some weight should be given to this interpretation of the patent office. No suit has ever been prosecuted by Lyndon or his successor, except in this one, to have it adjudicated that this patent was an interfering patent or an infringement of the complainant's patent, nor has there been any notification given of his claim. The defendant in this case had a right to assume, by reason of the laches of Lyndon in this regard, that this automatic device was not an equivalent. Aside, however, from these reasons against this automatic device being recognized as an infringement of complainant's patent, I am clearly of the opinion that the two devices are not equivalents.

The complainant argues that the Lyndon patent covers a frictionless type of valve in the by-pass, and asserts that the defendant is infringing that feature of the patent. The Lyndon patent, in the drawing, shows what is known as a "butterfly valve", and in one place in the description of the patent the name "butterfly valve" is used, but nowhere in the claims is there any reference to "butterfly valve" or to a frictionless type of valve. In claims 8 and 9 of the patent a claim is made for "a valve for such by-pass normally held in partly opened position." This is the only claim in the patent concerning the valve. Any

valve may be held in partly opened position, and such position may be the normal position of the valve in the mechanism. In regard to the valve, there is nothing in the description or claims to the effect that any particular kind of valve ought to be used, or that it would be better to use any particular kind of valve. The defendant does not use a butterfly valve but uses a needle valve in the by-pass, and this needle valve works upon a different principle from the operation of the butterfly valve in the Lyndon patent in this—the butterfly valve is held in partly opened position so that the water will continually flow past it out of the by-pass, while the defendant's by-pass is normally closed, the needle valve sitting firmly on its seat and only removed to let the water out when necessary to relieve the pressure of the water from the main nozzle upon the water wheel. The butterfly valve in the patent, it is said in the description, would be normally half-way open so that the amount of water flowing through the by-pass and around the wheel without doing work would be one-half the amount which the by-pass is capable of carrying. The principle upon which the defendant's device is worked is that no water goes out of the by-pass except to relieve the pressure upon the wheel. The Lyndon patent proposes to relieve the pressure to control the velocity of the wheel in both directions,—that is to say, make it speed up and make it slow down, while the defendant's device primarily is intended only to take the pressure off the wheel, and thereby make it tend to slow down. The defendant's device saves water, while the Lyndon patent continually wastes water. It is argued that the defendant's device, in this regard, is only

an improvement upon the Lyndon patent, and this might be well urged if the Lyndon patent claimed a frictionless type of valve.

If the defendant's device was manifestly a copy of the complainant's machine with the exception that the defendant had substituted a dashpot for a solenoid, or a dashpot for a reversible clutch gear, or a needle valve in the by-pass for a butterfly valve, in order to avoid infringement, the Court might well look with more favor on the claim that such elements should be regarded as equivalents. But where it is manifest that the whole conception of the alleged infringing device, and all its elements, are different, and where the machines are intended to operate on a different principle, the Court could not decide such things to be equivalents without doing violence to the rule of law on the subject.

The complainant has not sustained the claim of infringement. There are other questions of interest in the case, but it is unnecessary for the Court to notice them. The defendant will prepare a decree dismissing the bill, and submit the same to the complainant.

OSCAR A. TRIPPET,

Judge.

January 10, 1916.

(Endorsements.)

[TITLE OF COURT AND CAUSE.]

Citation

UNITED STATES OF AMERICA—SS.

To City of Los Angeles, Greeting:

You are hereby cited and admonished to be and appear

at a United States Circuit Court of Appeals for the Ninth Circuit, to be held at the City of San Francisco, in the State of California, on the 5th day of August, A. D. 1916, pursuant to an order allowing an appeal, entered in the Clerk's office of the District Court of the United States, of the Ninth Judicial Circuit, in and for the Southern District of California, Southern Division, in that certain suit in equity, No. A-87, wherein you are defendant and appellee, and George J. Henry, Jr., is the complainant and appellant, to show cause, if any there be, why the order or decree of said Court made and entered January 17, 1916, against said appellant, in the said order allowing appeal mentioned, should not be corrected and speedy justice should not be done to the parties in that behalf.

WITNESS, the Hon. Oscar A. Trippet, United States District Judge for the Southern District of California, of the Ninth Judicial Circuit, this 17th day of July, 1916.

(Signed) OSCAR A. TRIPPET,

United States District Judge for the
Southern District of California.

Due service and receipt of a copy of the within citation is hereby admitted this 15th day of July, 1916.

(Signed) JOSEPH F. WESTALL,

Solicitor and of Counsel for Defendant.

(Signed) ALBERT LEE STEVENS,

Solicitor and of Counsel for Defendant.

[TITLE OF COURT AND CAUSE.]

Bond on Appeal.

Know All Men by These Presents:

That Maryland Casualty Company, a corporation organized and existing under the laws of the State of Maryland, and duly licensed to transact business in the State of California, is held and firmly bound unto City of Los Angeles, defendant in the above-entitled suit, in the penal sum of two hundred fifty dollars (\$250.00), to be paid to the said City of Los Angeles, its successors or assigns, which payment well and truly to be made the Maryland Casualty Company binds itself, its successors and assigns, firmly by these presents.

Sealed with the corporate seal and dated this 10th day of July, 1916.

The condition of this obligation is such that whereas the said complainant, George J. Henry, Jr., of the above-entitled suit, is about to take an appeal to the United States Circuit Court of Appeals for the Ninth Circuit, to reverse an order or decree made, rendered and entered on the 17th day of January, 1916, by the District Court of the United States, for the Southern District of California, Southern Division, in the above-entitled cause by which the bill of complaint in the above-entitled cause was ordered, adjudged and decreed to be, and was thereby dismissed for want of equity at the costs of said complainant:

Now, therefore, the condition of the above obligation is such that if said George J. Henry, Jr., shall prosecute his said appeal to effect and answer all damages and costs, if he shall fail to make good his appeal, then this obligat-

tion shall be void; otherwise to remain in full force and effect.

In witness whereof, the seal and signature of said principal is hereunto affixed and the corporate name of said surety is hereto affixed and attested by its duly authorized attorneys-in-fact, at San Francisco, California, this 10th day of July, 1916.

(Signed) GEORGE J. HENRY, JR.

(Signed) MARYLAND CASUALTY COMPANY,
By (Signed) ARTHUR H. CONNOLLY,

Attorney-in-Fact.

(Signed) CHAS. A. QUITZAN, (Seal)

Attorney-in-Fact.

(Seal)

State of California,

County of San Francisco.—ss.

On this 10th day of July, 1916, before me, M. V. Colling, a Notary Public in and for said County of San Francisco, State of California, residing therein, duly commissioned and sworn, personally appeared Arthur H. Connolly, known to me to be the attorney-in-fact, and Chas. A. Quitzan, known to me to be the attorney-in-fact of the Maryland Casualty Company, the corporation that executed the within instrument, and acknowledged to me that said corporation executed the same; and that the signatures to said instrument of said attorneys-in-fact are the genuine signatures, respectively, of said Arthur H. Connolly, its attorney-in-fact, and said Chas. A. Quitzan, its attorney-in-fact.

?

(Signed) M. V. COLLING,

Notary Public in and for the County of
San Francisco, State of California.

[TITLE OF COURT AND CAUSE.]

Precipe Under Rule 75.

To the Clerk of the Court:

You will please incorporate into the transcript on appeal from this Court to the Circuit Court of Appeals, on order allowing appeal on behalf of defendant, made and entered the 3rd day of July, 1916, the following portions of the record of this cause in equity, to-wit:

The Testimony and Record and Proceedings in connection therewith taken and had in this cause, in narrative and condensed form, as filed herewith;

The Bill of Complaint herein;

The Answer, the Amended Answer and the Amendments to the Answer of the defendant herein;

The Petition of the Pelton Water Wheel Company for Leave to Intervene and be made a defendant, and the papers and affidavits thereon;

A certified copy of the Minute Order permitting such intervention of the Pelton Water Wheel Company and making it a defendant herein and permitting it to file an answer herein;

The Answer of the Pelton Water Wheel Company herein, the Amended Answer of the Pelton Water Wheel Company herein and the Amendments to the Answer of the Pelton Water Wheel Company herein;

The Assignment of Errors filed herein;

The Petition for Order allowing appeal herein;

The Order allowing Appeal herein;

The Citation on Appeal herein;

The names and addresses of the solicitors and counsel

for the parties herein, including the defendant and intervenor the Pelton Water Wheel Company;

The Stipulation between the Complainant and the Pelton Water Wheel Company, Intervenor and Defendant herein, that the answer of the said Pelton Water Wheel Company be stricken out and said intervenor and defendant be excluded as a party from this cause;

Certified copy of the Minute Order approving such stipulation between complainant and the Pelton Water Wheel Company;

Subpoena ad Respondendum;

All of the original Exhibits herein;

Bond on Appeal;

This Precipe;

The Opinion of the District Judge on file herein;

The Court Order of July 17, 1916, as to withdrawal of all exhibits; and

The Decree herein.

Very Respectfully,

(Signed) RAYMOND IVES BLAKESLEE,
Solicitor and Counsel for Com-
plainant-Appellant.

[TITLE OF COURT AND CAUSE.]

***Order for Transmission of Exhibits to
United State Circuit Court of Appeals
for the Ninth Circuit.***

It appearing that complainant-appellant in this cause has requested such action, and good cause appearing therefor,

It is ordered that all of the original exhibits forming

part of the evidence in this cause, being because of their nature necessary to inspection by the United States Circuit Court of Appeals for the Ninth Circuit, and by the Supreme Court of the United States, if said cause is appealed thereto, may be sent up as original exhibits instead of making copies or duplicates thereof, in addition to the transcript of the record, in accordance with Subdivision 4 of Rule 14 of the Rules of the United States Circuit Court of Appeals, for the Ninth Circuit, and subdivision 4 of Rule 8 of the Rules of the Supreme Court of the United States; the said exhibits to be delivered to the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit, to be returned to the files of the cause in this Court, upon the final determination of the appeal herein by the United States Circuit Court of Appeals for the Ninth Circuit or by the Supreme Court of the United States, if appealed thereto.

(Signed) TRIPPET,

Judge.

Dated Los Angeles, California, July 17, 1916.

[TITLE OF COURT AND CAUSE.]

***Order Extending Time to October 1, 1916, to
File Record.***

Good cause appearing therefor,

It is hereby ordered, that the time heretofore allowed said appellant to docket said cause and file the record thereof, with the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit, be and the same is

hereby enlarged and extended to and including the 1st day of October, 1916.

Dated at Los Angeles, July 27, 1916.

.....
U. S. District Judge, Southern District
of California.

[TITLE OF COURT AND CAUSE.]

***Order Extending Time to January 1, 1917,
to File Record.***

Good cause appearing therefor,

It is hereby ordered, that the time heretofore allowed said appellant to docket said cause and to file the record thereof, with the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit, be and the same is hereby enlarged and extended to and including the 1st day of January, 1917.

Dated at Los Angeles, California, September 23, 1916.

(Signed) TRIPPET,

U. S. District Judge, Southern District
of California.

[TITLE OF COURT AND CAUSE.]

***Order Extending Time to February 1, 1917,
to File Record.***

Good cause appearing therefor,

It is hereby ordered, that the time heretofore allowed said appellant to docket said cause and to file the record thereof, with the Clerk of the United States Circuit Court

of Appeals for the Ninth Circuit, be and the same is hereby enlarged and extended to and including the first day of February, 1917.

Dated at Los Angeles, California, December 15, 1916.

(Signed) JUDGE TRIPPET,

U. S. District Judge, Southern District
of California.

[TITLE OF COURT AND CAUSE.]

***Order Extending Time to April 1, 1917, to
File Record.***

Good cause appearing therefor,

It is hereby ordered, that the time heretofore allowed said appellant to docket said cause and to file the record thereof, with the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit, be and the same is hereby enlarged and extended to and including the first day of April, 1917.

Dated at Los Angeles, Cal., January 24, 1917.

(Signed) JUDGE TRIPPET,

U. S. District Judge, Southern District
of California.

[TITLE OF COURT AND CAUSE.]

***Order Extending Time to June 1, 1917, to
File Record.***

Good cause appearing therefor,

It is hereby ordered, that the time heretofore allowed

said appellant to docket said cause and to file the record thereof, with the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit, be and the same is hereby enlarged and extended to and including the 1st day of June, 1917.

Dated at Los Angeles, Cal., March 26, 1917.

(Signed) TRIPPET,

U. S. District Judge, Southern District
of California.

[TITLE OF COURT AND CAUSE.]

***Order Extending Time to September 1, 1917,
to File Record, Etc.***

Good cause appearing therefor,

It is hereby ordered, that the time heretofore allowed said appellant to docket said cause and to file the record thereof, with the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit, be and the same is hereby enlarged and extended to and including the 1st day of September, 1917.

Dated at Los Angeles, Cal., May, 1917.

(Signed) TRIPPET,

U. S. District Judge Southern District
of California.

[TITLE OF COURT AND CAUSE.]

***Order Extending Time to January 1, 1918,
to File Record.***

Good cause appearing therefor,

It is hereby ordered, that the time heretofore allowed

said appellant to docket said cause and to file the record thereof, with the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit, be and the same is hereby enlarged and extended to and including the first day of January, 1918.

Dated at Los Angeles, Cal.,

August 30th, 1917.

(Signed) TRIPPET,
U. S. District Judge, Southern
District of California.

[TITLE OF COURT AND CAUSE.]

***Order Extending Time to January 10, 1918,
to File Record, Etc.***

Good cause appearing therefor,

It is hereby ordered, (the parties hereto having so stipulated subject to approval of the District Court), that the time heretofore allowed said appellant to docket said cause and to file the record thereof, with the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit, be and the same is hereby enlarged and extended to and including the 10th day of January, 1918.

Dated at Los Angeles, Cal., December 19, 1917.

(Signed) TRIPPET,
U. S. District Judge Southern District
of California.

[TITLE OF COURT AND CAUSE.]

Stipulation.

Subject to the approval of the Court, whose approval

is hereby requested, the parties to the above-entitled suit, by their respective solicitors and counsel, stipulate and agree, as follows:

I.

To save cost and expense, facilitate said appeal and present the issues as presented in this Court, it is stipulated and agreed that the Transcript of Record on Appeal in the above entitled suit shall consist of a true and correct copy of each of the following papers, to-wit:

(a) A true and correct copy of all proofs and depositions and proceedings thereon taken and had on behalf of the respective parties out of Court, the same to be verbatim as appearing in the records of the respective notaries or special examiner certifying and returning the same, including a copy of each and all exhibits except model and physical exhibits, and excepting the following portions: the depositions of Alexander, Hewitt, Hance, Handley, Del Valle, Daehler, Dodd, McKay, Fessenden, Strong, Spangler, Gardiner, and Stebbins;

(b) The bill of complaint herein;

(c) The answer, the amended answer and the amendments to the answer of the defendant herein;

(d) The petition of the Pelton Water Wheel Company for leave to intervene and he made a defendant, and the papers and affidavit thereon;

(e) The minute order permitting such intervention of the Pelton Water Wheel Company and making it a defendant herein and permitting it to file an answer herein;

(f) The amended answer of the Pelton Water Wheel Company herein;

- (g) The assignment of errors filed herein;
- (h) The petition for order allowing appeal herein;
- (i) The order allowing appeal herein;
- (j) The citation on appeal herein;
- (k) The several orders extending time to docket appeal and file record thereof in the Appellate Court;
- (l) The bond on appeal herein;
- (m) The praecipe herein;
- (n) The opinion of the District Judge on file herein;
- (o) The decree herein;
- (p) The stipulation between the complainant and the Pelton Water Wheel Company, intervenor and defendant herein, that the answer of the said Pelton Water-Wheel Company be stricken out and said intervenor and defendant be excluded as a party from this cause;
- (q) The minute order approving such stipulation between complainant and the Pelton Water Wheel Company;
- (r) The Court order of July 17, 1916, as to withdrawal of all exhibits.

II.

It is further stipulated and agreed that in preparing the said Transcript of Record on Appeal, there may be omitted the notations of adjournment and meetings, captions, headings, and the like, with the exception of the dates of sessions of taking testimony and of proceedings on the record, and the parts of days upon which such sessions were held.

III.

It is further stipulated and agreed that an order be entered permitting complainant to withdraw all paper

exhibits upon giving the Clerk of this Court an identifying receipt therefor, complainant hereby stipulating and agreeing to return each and all said paper exhibits to the Clerk of this Court immediately after use of the same solely for the purpose of producing copies thereof for said Transcript of Record on Appeal.

IV.

It is further stipulated and agreed that an order be entered enlarging and extending to and including the tenth day of January, 1918, the time heretofore allowed complainant (appellant) to docket this cause on appeal and to file the record thereof, with the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit.

V.

It is further stipulated and agreed that the defendant (appellee) herein, is the owner of and operates, and at all times as to which mention is made thereof in this case has owned and operated, the hydro-electrical power plants and the water wheel governing apparatus thereof mentioned in the record of this case and charged to infringe the patent in suit and situated in the County of Inyo, California.

Dated Los Angeles, Cal., December 14, 1917.

(Signed) RAYMOND IVES BLAKESLEE,
Solicitor for Complainant.

(Signed) ALBERT LEE STEPHENS,
City Attorney.

(Signed) FREDERICK S. LYON,
Special Counsel, Solicitors for Defendant.

The within stipulation is hereby approved, and it is ordered accordingly.

(Signed) TRIPPET,
District Judge.

[TITLE OF COURT AND CAUSE.]

Stipulation.

Subject to the approval of the Court, whose approval is hereby requested, the parties to the above-entitled suit, by their respective solicitors and counsel, stipulate and agree that true copies of the stipulation between the parties of December 14, 1917, pertaining generally to the procedure on appeal herein, and of this present stipulation, shall be included in the Transcript of Record on Appeal herein.

Dated Los Angeles, Cal., December 18, 1917.

(Signed) RAYMOND IVES BLAKESLEE,
Solicitor for Complainant.

(Signed) ALBERT LEE STEPHENS,
City Attorney.

(Signed) FREDERICK S. LYON,
Solicitors for Defendant.

The above stipulation is hereby approved, and it is ordered accordingly.

(Signed) TRIPPET,
District Judge.

[TITLE OF COURT AND CAUSE.]

(Minute Order Permitting Intervention, Etc.)

At a stated Term, to-wit: The January Term, A. D.

1914, of the District Court of the United States of America, in and for the Southern District of California, Southern Division, held at the court room thereof, in the City of Los Angeles, on Monday, the twenty-seventh day of April, in the year of our Lord, one thousand nine hundred and fourteen.

Present: The Honorable Olin Wellborn, District Judge.
[TITLE OF COURT AND CAUSE.]

This cause coming on this day to be heard on the motion of The Pelton Water Wheel Company for leave to intervene herein as a party defendant, file its answer to the bill of complaint in this cause, and defend said cause; Raymond Ives Blakeslee, Esq., appearing as counsel for plaintiff; Joseph F. Westall, Esq., appearing as counsel for defendant; Wm. K. White, Esq., appearing as counsel for The Pelton Water Wheel Company; now, on motion of Wm. K. White, Esq., of counsel as aforesaid, it is ordered that said motion for leave to intervene be, and the same hereby is granted, and that, accordingly, The Pelton Water Wheel Company be, and it hereby is granted leave to intervene herein as a party defendant and file its answer on or before Monday, the 4th of May, 1914, to the bill of complaint in this cause, with right reserved to the complainant, when said answer of The Pelton Water Wheel Company is filed, to move to strike out said answer, or take such steps in the premises as he may be advised.

[TITLE OF COURT AND CAUSE.]

Stipulation.

The plaintiff in the above entitled suit and the inter-

venor therein, having adjusted and settled the matters involved in said suit and affecting and relating to the rights of the intervenor, it is hereby

Stipulated and agreed by and between said plaintiff and said intervenor that intervenor's amended answer in said suit may be stricken out and the intervenor be excluded as a party to said suit and that the court may make orders to such effect.

(Signed) RAYMOND IVES BLAKESLEE,
Solicitor for Plaintiff.

(Signed) WM. K. WHITE,
Solicitor for Intervenor.

Dated: January 23, 1915.

At a stated Term, to-wit: The January Term, A. D. 1915, of the District Court of the United States of America, in and for the Southern District of California, Southern Division, held at the court room thereof, in the City of Los Angeles, on Monday, the eighth day of February, in the year of our Lord, one thousand nine hundred and fifteen.

Present: The Honorable Benjamin F. Bledsoe, District Judge.

GEORGE J. HENRY, JR., Complainant,

vs.

CITY OF LOS ANGELES, Defendant,

and

THE PELTON WATER WHEEL COMPANY,

Intervenor.

No. A-87 Equity.

Pursuant to the written stipulation of the complainant

and the intervenor, The Pelton Water Wheel Company, by their solicitors of record, which is now filed in open Court, it is ordered that the amended answer herein of said intervenor be, and the same hereby is stricken out, and that said intervenor be, and it hereby is excluded as a party to said suit.

*In the United States District Court, Southern District
of California, Southern Division.* L

GEORGE J. HENRY, Jr.,

Complainant.

vs.

CITY OF LOS ANGELES,

Defendant.

No. 87-A

In Equity.

Friday, January 9, 1914, at 10:30 o'clock A. M.

The following proceedings on behalf of complainant in this action were commenced before me, I. Benjamin, Special Examiner in Chancery, pursuant to stipulation and notice, at the office of Raymond Ives Blakeslee, room 730 California building, Second and Broadway streets, Los Angeles, California, at the hour of 10:30 A. M. of Friday, January 9, 1914.

PRESENT: RAYMOND IVES BLAKESLEE, Esq., solicitor for complainant.

By consent adjournment was taken until the hour of half after 10 o'clock on January 15, 1914, at the same place.

GEORGE J. HENRY, Jr., complainant, being produced as a witness on his own behalf, and being first duly sworn, testifies as follows, in answer to interrogatories propounded by Mr. Blakeslee:

DIRECT EXAMINATION

Q. 1. Please state your name, age, residence and occupation.

A. George J. Henry, Jr.; 42 years old; occupation,

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90 23 insert "January 15, 1914. 10:30 o'clock A. M.
Met pursuant to adjournment at the office of
Raymond Ives Blakeslee, Esq., solicitor and
counsel for complainant, at room 730 Cali-
fornia Building, Los Angeles, California, at
the hour of 10:30 o'clock A. M., January 15,
1914.

PRESENT: RAYMOND IVES BLAKES-
LEE, Esq., solicitor for complainant
JOSEPH F. WESTALL, Esq., solicitor for
defendant.

Proceedings were resumed before the Special
Examiner as follows: It is stipulated by and
between counsel for both parties that the read-
ing over and signing by the witnesses of their
respective depositions to be given herein, are
waived.

It is stipulated and agreed that the exhibits
offered in evidence by either party in this case
may be retained in the possession of the re-
spective counsel offering the same until the
termination of proofs on behalf of the re-
spective parties, and are to be transmitted
to opposing counsel for the purpose of taking
testimony by them. And, furthermore, at the
conclusion of the taking of proofs the said
exhibits may remain in the possession of re-
spective counsel subject to inspection at any
time after being offered in evidence during
office hours by opposing counsel; all exhibits
to be delivered to the Special Examiner for
filing with the Clerk, three days prior to the
day upon which the case is set for hearing."

hydraulic engineer; residence, San Francisco, California.

Q. 2. Please state what experience you have had in the field of hydraulic engineering.

A. I have had 20 years' experience as a designing, constructing and installing engineer, of water wheels, nozzles, governors and associated hydraulic specialties, and have examined a good many hundreds of water wheels, governors and nozzles, and was for 12 years chief engineer of the Pelton Water Wheel Company, in fact, until 2 years ago, at which time I went into business myself and have continued in the same line, designing, building and installing water wheels and associated power apparatus.

Q. 3. What, if any, academic or technical training have you had directed at fitting you for this occupation?

A. I had three years as special student in the University of California in the mechanical department, during which I took one year's post graduate work in the mechanical laboratories and two years' post graduate work in the chemical laboratories, leaving the University in 1894 to take a position in the electrical department of the World's Columbian Exposition. I remained on the payroll of the Columbian Exposition Company of Chicago until about January, 1894, and entered the employ of the Pelton Water Wheel Company on or about February 1, 1894, and continued in their employ until the middle of December, 1911.

Q. 4. What kind of electrical experience did you have in the connection last stated?

A. My preparation in college and employment in Chicago immediately following my college work was at

that time intended for the purpose of fitting me as an electric transmission specialist. My employment, however, since February, 1894, has been more specifically in the hydraulic field, although most of my work has been associated with electrical devices, and I am familiar with the principles that enter into their design and operation. I am an associate member of the American Institute of Electrical Engineers, a member of the American Society of Civil Engineers, and of the American Society of Mechanical Engineers.

Q. 5. Can you give the names and locations of any hydraulic installations with the setting up of which you have been connected in one way or another?

Mr. Westall: Counsel for defendant objects to the question as incompetent, irrelevant and immaterial, it not being shown that such experience has any bearing on any of the issues in this case.

Mr. Blakeslee: Counsel for complainant states that this line of questioning is merely to lay a foundation for the further testimony of the witness, as will be made clear by his subsequent deposition.

A. During this last year I designed and built and went up to Alaska to put into operation a power plant for the Alaska Gastineau Mining Company, one of the largest properties in the world. The year previous I designed and built for them a similar equipment which has been in operation for about a year. I designed and there have been built under my direction about 20 water wheels in the Alaska Treadwell Mine, 3 hydraulic plants for the Homestake Mine in South Dakota, the first plant installed by the Edison Electric Company for supplying

the Los Angeles territory and known as the Redlands plant, the second plant purchased by this same company and known as the Santa Ana plant, a portion of the Mill Creek number 3 plant purchased by this same company, a portion of the Lytle Creek plant installed by the same company, the Turbine apparatus and the accessories in the Borel plant of the Pacific Light & Power Company of Los Angeles, operating the Pacific Electric Railway. I have been associated in a professional way with the designing, construction and installation of the 60,000 kilowatt pipe line for the two Big Creek plants recently installed, one of which is now in operation by this same company; and designed and constructed and furnished to the Southern Sierras Power Company the hydraulic machinery for their number 3 plant, located near Bishop, California, and supplying power to this territory over one of the longest distance power transmissions in the world. I designed and superintended the construction of the machinery for this same company's first plant and their second plant, portions of their fourth plant, and numerous other installations throughout the Pacific Coast, and, in fact, the entire world. During the period from 1896 to 1898 I was acting as engineer for the Pelton Water Wheel Company at their New York office, which office does most of the export business of the Pelton Company, and during which time I designed and superintended the construction of a large quantity of hydraulic apparatus, which was shipped to foreign countries.

Q. 6. Are you acquainted with the disclosure of the United States letters patent 695220, issued to Lamar

Lyndon, March 11, 1902, ~~by~~ being the letters patent in suit?

A. I am.

Q. 7. Can you produce the original letters patent so identified?

(The witness produces said letters patent.)

Mr. Blakeslee: The complainant offers in evidence a copy of said United States letters patent number 695220 as Complainant's Exhibit A, being the patent in suit, the original letters patent being at all times ready in court to be produced or ready to be produced for the examination of counsel upon request. The Examiner is requested to mark such copy of said letters patent as stated.

Mr. Westall: Counsel for defendant objects to the introduction of an uncertified copy of the original patent as incompetent, and on the ground that there is not sufficient evidence to prove the grant or issuance of the letters patent referred to.

Mr. Blakeslee: In view of counsel's objection, we also offer in evidence a certified copy of the file wrapper and contents, being the certified record of said letters patent number 695220, as it exists in the United States patent office, and ask the Examiner to mark the same Complainant's Exhibit B.

Mr. Westall: Counsel for defendant repeats and renews his objection to the copy of the file wrapper and contents as incompetent, irrelevant and immaterial, as not sufficient proof of the grant or issuance of the letters patent in suit.

The said copy of said letters patent so offered in evidence is marked Complainant's Exhibit A, and the cer-

tified copy of the file wrapper and contents is marked Complainant's Exhibit B.

Q. 8. By Mr. Blakeslee: Do you know who is the present owner of the right, title and interest in and to said letters patent number 695220 in suit?

Mr. Westall: Counsel for defendant objects to the question as calling for a conclusion of the witness and as incompetent, irrelevant and immaterial.

A. Yes, sir. I am the owner, having purchased the same from Lamar Lyndon, the patentee.

Q. 9. By Mr. Blakeslee: Can you produce in evidence any evidence pertaining to the ownership of these letters patent in suit and the right, title and interest therein and thereunder?

Mr. Westall: The same objection is repeated.

A. Yes, sir; I have here an agreement.

(The witness produces a paper entitled "Agreement.")

Mr. Blakeslee: This agreement, bearing the certificate of the Commissioner of Patents, certifying to the recording, under date September 17, 1913, is upon production handed to the Examiner with the request to spread the same upon the record and to return the same to complainant, to be always ready in court to be produced or to be produced upon demand of counsel for inspection, and the same is now submitted to counsel for defendant for inspection.

Mr. Westall: Counsel for defendant objects to the evidence and objects to the method of proving the instrument on the ground that it is incompetent, irrelevant and immaterial, no foundation laid, and that a copy spread upon the records of the original instrument is

not competent evidence and is not any evidence or any proof of the agreement in question.

Mr. Blakeslee: I will ask the Examiner to mark both said original letters patent in suit and said recorded agreement, bearing the certificate of recordation, for identification, as "Recorded agreement transferring the Lyndon patent in suit to Complainant," and "Original letters patent in suit," and to certify upon each as to such marking and to return the same to complainant's counsel.

Mr. Westall: Counsel for defendant objects to the unusual way of putting in evidence either the original patent or the purported agreement. I do not understand that it is the intention of counsel for complainant to offer either the original patent or the agreement referred to or license, in evidence, and, therefore, counsel for defendant objects to the marking by the Examiner of either of these instruments or the spreading of them in any way on the record, as not being offered in evidence, and not being part of the record in this case.

The Examiner thereupon marks the said agreement "Recorded Agreement transferring the Lyndon patent in suit to complainant, for identification," and said original letters patent in suit as "Original letters patent in suit, for identification."

The following is a copy of said "Recorded Agreement:"

AGREEMENT

THIS AGREEMENT, made and entered into this 7th day of July, 1913, by and between LAMAR LYNDON, a citizen of the United States and a resident of

the City, County and State of New York, party of the first part, and GEORGE J. HENRY, JR., a citizen of the United States and resident of the City of San Francisco, in the County of San Francisco, and State of California, party of the second part, WITNESSETH:

WHEREAS, the party of the first part is the owner of Letters Patent of the United States for Water Wheel Governor, No. 695,220, dated March 11th, 1902; and,

WHEREAS, the party of the second part is desirous of obtaining the entire right, title and interest in and to said Letters Patent No. 695,220;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN, Be it known, by these presents, that the party of the first part and the party of the second part have entered into an agreement as follows:

1. The party of the first part warrants that he is the sole owner of all right, title and interest in and to the said Letters Patent No. 695,220; that he has not disposed of any interest of any nature whatsoever thereunder, nor any claim of any kind thereunder to any one up to the present time, and the party of the first part hereby assigns unto the party of the second part, his heirs, executors and assigns, the full right, title and interest in and to the said Letters Patent, together with all claims of any nature whatsoever for damages, profits, etc., that may have accrued in the past or which shall accrue in the future under the aforesaid Letters Patent, and he assigns unto the party of the second part, his heirs, executors and assigns the right to sue in the name of the party of the second part under said Letters Patent for any claim of any nature whatsoever which may have

arisen or which may arise thereunder, from any cause whatsoever.

2. The party of the second part hereby pays unto the party of the first part the sum of Fifteen Hundred and Fifty Dollars (\$1550) in cash, Fifty Dollars (\$50) of which has been separately paid as a consideration for an option, the receipt of which is hereby acknowledged by the party of the first part, and the party of the second part hereby agrees to deliver to the party of the first part two notes to make up the balance of a total purchase price of Twenty-five hundred and fifty Dollars (\$2550), one of said notes to be for Five Hundred Dollars (\$500), payable in three months from the present date, and the other of said notes to the amount of Five Hundred Dollars (\$500), payable in six months from the present date, both of said notes to bear interest at the rate of six per cent. (6%)

IN TESTIMONY WHEREOF, the parties hereto have hereunto set their hands and affixed their seals the date first above written.

(Signed:) Lamar Lyndon
George J. Henry, Jr.
Prindle & Wright
Attys.

State of New York,
County of New York.—ss.

On this 7th day of July, 1913, before me personally appeared LAMAR LYNDON, to me known and known to me to be one of the persons described in and who exe-

cuted the foregoing instrument, and he duly acknowledged to me that he executed the same.

Lisette Broderick

Notary Public No. 304

New York County

(Seal)

State of New York,
County of New York.—ss.

On this 7th day of July, 1913, before me personally appeared ARTHUR WRIGHT, to me known and known to me to be a member of the firm of PRINDLE & WRIGHT, which executed the foregoing instrument merely on behalf of the party of the second part, GEORGE J. HENRY, Jr., and he duly acknowledged to me that he executed the same merely on behalf of the said party of the second part, GEORGE J. HENRY, Jr., with due authority first obtained.

Lisette Broderick

Notary Public No. 304

New York County.

(Seal)

(Slip attached to foregoing document as follows:)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

Received and Recorded on the 17th day of September, 1913, in Liber U 93, page 223 of Transfers of Patents.

IN TESTIMONY WHEREOF, I have caused the seal of the Patent Office to be hereunto affixed.

(Seal of Patent Office)

Thomas Ewing

Exd Commissioner of Patents.

E. H. G.

(Endorsed:) Recorded Sep 17 1913 U. S. Patent Office.
Geo. J. Henry, Jr. 733 Rialto Bldg San Francisco, Cal.
(In pencil) Fee \$2 Pd.

(Endorsed:) U. S. District Court, Southern District of
California, Southern Division. George J. Henry, Jr. v
City of Los Angeles. In Equity No. A 87. Recorded
Agreement transferring the Lyndon Patent in suit to
Complainant. Marked for Identification. Jan 15, 1914.

I. Benjamin

Special Examiner.

Q. 10. By Mr. Blakeslee: I will now ask you to
summarize the disclosure of the Lyndon patent in suit,
putting such disclosure into a statement in as brief a
compass as possible.

Mr. Westall: Counsel for the defendant objects to
the question as incompetent, irrelevant and immaterial,
as calling for a conclusion of the witness, no proper
foundation having been laid. It is further objected to
as calling for not the best evidence.

A. Mr. Lyndon's invention as disclosed in the patent
in suit, number 695220, is for apparatus for accomplish-
ing automatically the speed control or governing of
water wheels; for accomplishing this purpose he pro-
vides, first, a device sensitive to the speed of the water
wheel, which device sets into operation, second, a con-
troller, said controller being for the purpose of bringing
about the movement of the water wheel gate or gates
by, third, power means, which power means may shift
the gate in either direction, that is, to admit more or
less water to the water wheel, for the purpose of meet-
ing added or subtracted power demands. Fourth, a

water gate or valve, the shifting of which causes a variation in the water flow to the water wheel. Fifth, a by-pass to permit a greater or less quantity of water to be discharged from the pipe line or water conduit, to compensate for less or more water being supplied through the water gate, and, sixth, returning devices for the governor, said by-pass being connected with and operated by said governor means for the purpose of preventing inertia effects in the pipe lines. Seventh, returning devices of the by-pass. Eighth, a device set into action by the controller and acting to shift the controller so as to prevent the governor over-running.

Q. 11. By Mr. Blakeslee: Please define more fully what meaning you intend to convey by the term "governor over-running."

Mr. Westall: The same objection is repeated.

A. In governors as previously applied and installed, the speed control was not as accurate as desired, in that the governor would not bring the speed of the water wheel shaft back exactly to normal, but would bring it back only to a speed slightly greater than or slightly less than normal. The effect of this on electrical transmission service was very bad in that, for example, incandescent lights being supplied from this service would burn either too brightly or not brightly enough, the effect of the speed difference being greatly accentuated in such devices as incandescent lights, resulting in dissatisfied customers and unsatisfactory electric service by power companies. The demand for accurate speed control, that is a governor controlling the water wheel devices so that the speed would be brought back accurately to the cor-

rect running speed, was very great. Mr. Lyndon's introducing his clutch under the control of the movement of the controller, and for the purpose of re-establishing correct speed, so that the governor would not "over-run," was a decided step forward in the art.

Mr. Westall: Counsel for defendant moves that the latter part of the answer, beginning with "Mr. Lyndon" be stricken out as not responsive to the question, as being a mere conclusion of the witness, and as being mere matter of opinion outside of the issues and not pertinent to any question involved in this case.

Mr. Blakeslee: It is pointed out that the present brief description or exposition of the disclosure of the patent in suit is for the purpose of putting before the court in succinct form the issues involved in this suit, and the correctness of which presentation is, of course, open to attack by the defendant at the proper time and by the proper method. The patent, of course, speaks for itself, and the present description is merely for the purpose of digesting the disclosure of the patent.

Q. 12. By Mr. Blakeslee: Please point out in the Lyndon patent in suit any specific part to which you have referred in your last answer in mentioning a "clutch."

Mr. Westall: Counsel for defendant objects to the question on the ground that there is no proper foundation laid.

A. I referred specifically in the Lyndon patent to the clutch consisting of plates 22 and 23, the latter actuated by the lever 24, setting into operation thereby plate 22 and rod 25, with its associated springs and connec-

tions, thereby causing the return of the controller to inoperative position to prevent the governor over-running.

Q. 13. By Mr. Blakeslee: Through what part is actuation imparted to this clutch which you have pointed out?

A. In the Lyndon patent it is accomplished through magnets 31-32, actuated from the dynamo 8, which in the Lyndon patent is the means adopted for sensitiveness to speed and for setting into operation the controller and subsequent governing devices.

Q. 14. And when the clutch is in operative condition, by what part is power applied through it?

A. When the clutch is set into operation by the aforesaid means, power is applied to it through shaft 12.

Q. 15. Please now state the operative relation between the water gate and the by-pass disclosed in the Lyndon patent in suit.

A. The operative relation between these two devices is such that the water gate being moved in a closing direction by the governor, the by-pass is moved in an opening direction; and during governor action of the water wheel gate to shift it in an opening direction to supply a greater quantity of water to the wheel through the demand of the governor, the by-pass is automatically and coincidentally therewith moved in a closing direction, these movements preventing the inertia effects of the water column in the main supply pipe, which would otherwise occur, due to a change of water velocity in the main pipe line as quickly as would be required to secure good speed regulation.

Q. 16. Can you point out any feature or part of the

disclosure of the Lyndon patent in suit by or through which the coincident action of the water gate and by-pass is caused?

A. Yes, sir. Through the rotation of shaft 20 the water gates are moved in one direction and the by-pass 48 in the opposite direction, the direction in this case referring to opening or closing.

Q. 17. And what drives the shaft 20?

A. The shaft 20 is driven from the power shaft 6 and gears 4 and 5 through the governor-actuated clutches and gears to shaft 12, and thence to shaft 20; and upon the governor operation magnets 64 set into operation clutch-plate 58 for shifting the by-pass through means for the rotation of the gate operating shaft 20, thus bringing about a movement of the by-pass valve to open as the gates close, or to close as the gates open, under the control of the governor.

Q. 18. Please a little more fully set forth your understanding of the pressures occurring in the water of the pipe or conduit with reference to which the governor, being the subject of the Lyndon patent in suit, operates for correction as you have testified?

A. In water wheel plants we have a supply pipe or "penstock" supplying water to a wheel or wheels. The quantity of water requisite for driving the wheel varies from time to time according to the demand for power from the wheel. As, for example, if the wheel is driving a saw mill, when a log is put against the saw the speed will fall unless more water be thrown onto the wheel. If the wheel be driving an electric generator, which generator is supplying street car service, the starting or

stopping of the electric car will cause more or less power to be required from the wheel, and to prevent a variation in the speed of the wheel, which speed must be maintained constant to give good service, it is necessary that we automatically and very quickly supply the wheel with the necessary added water from the supply pipe or penstock to meet this new demand for power. Or, if a less quantity of power is required from the wheel, it is necessary that we quickly and automatically reduce by the governor the water quantity being supplied to the wheel, and we are confronted with a large mass of water moving at a fixed velocity, which velocity must be very quickly changed to meet these conditions, unless we introduce some other device which will enable us to quickly vary the power supplied to the water wheel without changing the water velocity in the pipe at a dangerously quick rate. The method adopted by Mr. Lyndon is that of quickly reducing or increasing the water quantities supplied to the water wheel, and, coincident with the movement of the gate, to accomplish this, opening or closing as may be required, a by-pass ^{is used} so as to retain the velocity of water in the supply pipe substantially constant during the period of governor movement, and thus preventing the formation of what is popularly known as a water ram, and technically known as the inertia effect of a moving column of water in the supply pipe.

Q. 19. Without any such governing device acting to stabilize the flow of water to and past the water gate, what is the effect upon the volume of water passing the gate when the gate is moved toward closed position?

A. The first effect is, as pointed out in the Lyndon

patent, that of a momentarily increased velocity of flow occasioned by the water ram or inertia of the moving water column

Q. 20. And what will be the effect of this increased velocity upon the water wheel to which such water at increased velocity is supplied?

A. The effect is that of increasing the speed of the water wheel, and, therefore, counteracting the effort made by the governor, unless a by-pass be used to prevent the formation of this increased velocity brought about by the water ram.

Q. 21. And conversely when the water gate is further open or further removed from closed position, what is the effect upon the water wheel?

A. As the gate is opened the first effect is that of reducing the speed of the water wheel. It will be noted that both of these effects are contrary to that desired to be obtained and, therefore, are defects which it was Mr. Lyndon's desire to correct and which his invention does overcome.

Q. 22. Now, in accordance with the disclosure of the Lyndon patent, what takes place with respect to the pipes when the water gate is moved further from or away from closed position?

A. As the water gate is moved in its opening direction, the by-pass is moved in a closing direction, thus retaining the velocity of the water in the pipe line constant by the governor action, and, therefore, more quickly accomplishing a restoration to correct speed.

Q. 23. When the water gate is moved in the opposite direction or toward closed position, what is the effect

produced by the operation of the by-pass in the Lyndon patent?

A. In this case the by-pass is moved in an opening direction. That is, contrary to the direction of the movement of the water gate. The velocity of the water in the pipe is retained substantially constant and, therefore, governing to correct speed more quickly and more accurately accomplished.

Q. 24. Is or is not such governing action equally beneficial under all conditions met with in installations wherein there are variations or differences in the head or pressure of the water in the pipe or penstock?

A. There are different sets of conditions which call for different adjustment of governing means. In the case of a long pipe line laid on a very gentle slope it is obvious that upon opening a gate at the lower end of the pipe the water will not accelerate as quickly as it would in the case of a pipe laid upon a steep grade. In order to accomplish accurate speed regulation it is customary to make the water gates actuated by governing devices shift to correct for power requirements from the water wheel in an extremely short period of time, two to five seconds being in ordinary practice the limit allowed for the movement of the gates from full open to full closed. In the case of a long pipe line laid upon a gentle slope, as is very frequently the case, in turbine installations such as illustrated in Mr. Lyndon's drawing figure 1, the rate with which the water will accelerate when the gate is open is such that the full velocity of flow will not be attained in the period of governor movement, as, for example, within 5 seconds, as mentioned

above. It is therefore obvious that under such conditions the power would not be supplied to the wheel as fast as called for by the governor. In the case, however, of steep pipe lines, that is, where the head is high compared with the length of the pipe line, the action of gravity upon the water in the pipe is such that the water will accelerate very much faster than in the previous case, such acceleration in many cases being at a rate so that the water will attain its full required velocity within the time of governor movement of the gates. Where such is the case there is obviously no necessity for maintaining an initial velocity in the water in the pipe line, whereas in the first case with the long pipe line on the gentle slope first mentioned it is advisable to maintain an initial velocity ready to respond to the movement of the water gate by the governor.

Mr. Westall: Counsel for the defendant moves to strike out all that portion of the answer beginning with the words "in order to accomplish accurate speed regulation" as not responsive to the question.

Q. 25. By Mr. Blakeslee: Please state which action of the governor of the Lyndon patent is more beneficial when a greater normal pressure exists in the water supply pipe, and which action is more beneficial when a lesser normal pressure exists in the water supply pipe?

Mr. Westall: Counsel for the defendant objects to the question as vague and indefinite, "what is more beneficial" being not clear.

A. In the speed control of water wheels the water ram produced on slowing up the column of water in the supply pipe is proportional to the length of pipe, the

velocity of water, the amount of slowing up or changing velocity, and, inversely, to the time required to accomplish the retardation or velocity change. Whereas on increasing the velocity we are dependent entirely upon the action of gravity to accelerate the water column in the pipe line regardless of the amount the gates may be opened. It will therefore be necessary for us in all cases where we quickly close the gates, regardless of the water pressure or head, and dependent only on the length of pipe and the velocities involved, to provide a by-pass to prevent too rapid velocity change if we are going to prevent the formation of a dangerous water ram. The opposite movement, however, that of accelerating the water in the pipe line, is one that we depend upon gravity to accomplish. Consequently, where the pipe is sufficiently steep to bring about this acceleration in a time equal to or less than the movement of the governor, it is not necessary for us to initially retain a water movement in the pipe. I would therefore say that in all cases of long pipe lines it is necessary to provide an opening of the by-pass proportional to the closing gate to prevent the inertia effect or water ram, and that in all cases of long pipe lines with low heads or pressures it is necessary to provide a closing movement of the by-pass in direct proportion to the opening of the water gate.

Mr. Westall: Counsel for the defendant moves that the answer be stricken out as not responsive to the question, and as containing matters of opinion concerning the operation or supposed operation of the device of the patent in suit, which has not been inquired about, and which is incompetent, irrelevant and immaterial.

Q. 26. By Mr. Blakeslee: Under these different conditions appurtenant to the water supply and the head or pressure thereof, what, if any, differences will be necessary in adjusting or setting the by-pass in relation to its positions before governing action commences?

Mr. Westall: Counsel for the defendant objects to the question as vague and indefinite.

A. To secure accurate speed regulation and to prevent the inertia effect in the pipe line, it will be necessary to in all cases set the by-pass so that the governor will open the by-pass at a rate substantially equal to the closing rate of the water gates. But in cases where the pipe line is steep, that is, the pressure is great as compared with the length of the pipe line, and where water acceleration in the pipe line will take place at a rate as quickly as demanded by the governor, it will not be necessary to retain the by-pass valve in an open position before governor movement, it being only necessary that a velocity in the pipe line equal to the maximum demand can be reached in a period equal to that of governor movement. For example, if the governor be set to make its full movement in 5 seconds of time and our pipe line is on such a slope that the water will attain its maximum velocity equal to the full load in 10 seconds of time, the by-pass would then be set to discharge one-half of the quantity of water when in its normal position, the period of opening in 5 seconds being sufficient to enable the water to accelerate from 5 feet per second to the maximum of 10 feet per second. If, on the other hand, the pipe line be steep enough so that the water will attain its maximum velocity from zero in 5 seconds

or less of time, and the governor requires 5 seconds to make its full stroke, the normal position of the by-pass then could be fully closed, because we are dealing with the inertia effect which is entirely taken care of by gravity, and have only to provide by-pass discharge on a closing movement to prevent the previously mentioned water ram.

Q. 27. By Mr. Blakeslee: What results from the utilization of the governor for water wheels disclosed in the Lyndon patent in the direction of water consumption during a given complete governing action?

Mr. Westall: Counsel for defendant objects to the question as incompetent, irrelevant and immaterial, and as not touching or affecting any issue in this case.

A. By the use of Mr. Lyndon's governor and associated by-pass, the return of the by-pass after it has been opened by governor movement to a position such as to slowly retard the water flow in the pipe, accomplishes water economy, as the water flowing at a reduced velocity in the pipe results in the use of less water on the water wheel during periods of reduced load. The degree of economy so effected is, as pointed out in my previous answers, dependent upon the degree to which the water velocity may be retarded, and still be such as to enable the governor to quickly re-establish an increased velocity in the pipe as may be required for increasing loads on the water wheel. This water economy is a feature of great importance naturally resulting from the by-pass governing device.

Q. 28. By Mr. Blakeslee: Please now point out in the disclosure of the Lyndon patent the parts or groups

of parts which directly cause the actuation of the gears 9 and 10 to set into operation the shaft 12 through the gear 11.

Mr. Westall: Counsel for the defendant objects to the question in that no proper foundation has been laid for the testimony of this witness as to the disclosure of the Lyndon patent, in that it has not been shown that he is competent to understand the drawings or that he does understand the drawings and the disclosures there made.

Mr. Blakeslee: The answers of the witness taken together with the disclosure of the Lyndon patent in suit will speak for themselves as to the witness' qualifications to answer the questions which are being put.

A. The magnets 15 and 16 operate on lever 14 through the armature 17, the lever 14 being pivoted at 14a, said lever shifting a double-ended clutch. After the magnet has been energized, it will engage gear 9 or 10, causing a corresponding movement of shaft 12 in one direction or the other, depending on which magnet has been energized, and, therefore, a movement of shaft 20 shifting the water gate in one direction and the by-pass in an inverse direction.

Q. 29. When either one or the other of the gears 9 or 10 is meshed with the gear 11, what causes as a prime mover the rotation of the shaft 12?

A. The movement of shaft 12 is effected through power transmitted from shaft 6 through gears 4 and 5 and main operating turbine shaft 3, as a power means under the control of a device sensitive to speed variation, setting into operation gear 9 or 10 as previously discussed.

Q. 30. By what parts is the energization of the electro magnets 15 and the energization of the electro magnets 16 controlled?

A. The energization of magnets 15 is accomplished through the closing of an electric circuit at contacts 40 and 40a, thus energizing them from dynamo 8; whereas magnets 16 are energized from contacts 41 and 41a from dynamo 8, in both instances the said contacts being brought about through the operation of plunger rod 35 actuated by solenoid 33, this being the controller which is responsive to the speed changes of dynamo 8. Dynamo 8 is driven from the main water wheel shaft and is sensitive to the variations of speed therein by a variation of its voltage, said voltage variation affecting solenoid 33 as above mentioned.

Q. 31. What directly drives the generator 8?

A. The generator 8 is driven from the water wheel shaft through shaft 6, pulley 7 and suitable belting.

Q. 32. What controls the energization of electro magnets 32 controlling the lever 24 for setting the clutch 22-23, as you have testified?

A. Said magnets are energized through contacts 45 and 46, and 45a and 46a, upon movement of rod 35, actuated by solenoid 33. Upon these contacts being made the magnets are energized and the returning clutch plates 22 and 23 set into movement, the shifting of rod 25 accomplished through the returning of rod 26 through the action of the springs, and upon the release of plate 23 on the de-energizing of magnets 31 and 32, rod 25 is re-set in original position by springs 29, 29, to be ready for another governing movement, and this operation has prevented the "over-running" of the governor.

By consent of counsel an adjournment is now taken until 2 o'clock P. M.

Thursday, January 15, 1914, 2 o'clock P. M.

This being the time to which the further taking of depositions was continued, the direct examination of the witness GEORGE J. HENRY, Jr., is resumed.

Q. 33. By Mr. Blakeslee: You have referred to the energization of the electro magnets 64. Please state how in the Lyndon patent disclosure this energization is controlled.

A. The energization of these magnets is controlled through contacts 100, 101, 103 and 104, which completes the circuit, allowing them to be energized from the dynamo before mentioned.

Q. 34. What produces this contact and in what manner?

A. The contact is brought about through the shifting of the lever connections actuated by rod 35, which in turn is actuated by solenoid 33 which is responsive to the voltage changes from the dynamo, and, therefore, speed changes in the water wheel, as previously described.

Q. 35. What, if any, relation takes place between this last stated operation involving parts 100, 101, 103 and 104, and the closing of the circuits at the contacts 40 and 41?

A. When contacts 100 and 101 are closed with 103 and 104 respectively, so that magnet 64 is energized, the contacts 40 ~~and~~ 41 are engaged with the respective contacts 40a or 41a.

Q. 36. And when contact is broken at the contacts

40 and 41, what, if anything, takes place at contacts 100 and 101 and their co-operating contacts?

A. They also are broken.

Q. 37. Therefore, what is the relation with respect to the energization and de-energization between the clutch magnets 15 and 16 and the magnet 64?

A. When either of the magnets 15 or 16 is energized magnet 64 is also energized. And whenever 15 or 16 is de-energized, so also are magnets 64 de-energized.

Q. 38. What is the relation between the closing and breaking of circuit at contacts 100 and 101 and the making and breaking of circuits at contacts 45a and 46a?

A. All four of these contacts are made and broken with their associated contacts or anvil pieces at substantially the same time.

Q. 39. And, further, what is the relation between the making and breaking of circuits at contacts 45a, 46a, and 100 and 101, and the making and breaking of circuits at contacts 40 and 41?

A. Whenever contacts are made at either 40 or 41, contacts are made at 45a, 46a, 100 and 101, with their anvil pieces 45, 46, 103 and 104.

Q. 40. Now, therefore, what is the relation as to the coincidence or the contrary between the energization of magnets 15 or 16, on the one hand, magnets 32 on the other hand, and, still further, magnet 64?

A. Magnets 15 or 16, whichever is energized, correspond with an energization of magnet 32 and of magnet 64.

Q. 41. When the clutch 22-23 is operated after being set by lever 24 during a governing operation, what results with respect to the energization or de-energization

of either the magnets 15 or 16 and the magnets 32 and the magnets 64?

A. When sufficient movement has been produced in the returning mechanism, rod 25 and associated parts, spring pressure is put upon rod 26 until sufficient tension has been established to cause a break in the contact 40 or 41, depending on which direction the governor is shifting the gates, and when said break occurs corresponding magnet 15 or 16 is de-energized, interrupting the governing action before it has over-run the proper amount. And, as described in my previous answer, the corresponding contacts are broken and magnets 32 and 64 are also de-energized.

Q. 42. In the rotation of shaft 20, controlling the water gate, in the governor action what operations are produced and what effects are caused directly under the control of said shaft?

A. The rotation of shaft 20 causes a movement of water gate controlling the flow of water to the turbine from the pipe line. Its rotation also when magnet 64 is energized causes a rotation of the sheave wheel 54, by connection of the clutch plates 57 and 58, the latter being shifted by the energized magnet, which movement of the sheave wheel causes a corresponding inverse movement of by-pass valve 48.

Q. 43. Continued rotation of this shaft 20 causes what action?

A. If shaft 20 be rotated to a point beyond that sufficient to fully open or fully close the gates, the circuits energizing the magnets are broken through contact pieces 84, 85, 86 and 87, by the action of the tappets and screw

plate 77, the latter arriving at one end or the other of the screw threaded portion of shaft 20, and engaging one or the other of said tappets, causing a shifting of the bell crank shown and a break in the corresponding electro magnet, such breaks taking place between 84 and contact 86, and lever 87 and contact 85. Also continued rotation of shaft 20 through the rotation of sheave 54, which occurs when magnet 64 is energized, causes the pin 73 in its rotation to lift arm 74, causing a break in the circuit of the energized magnet 64, thus preventing further rotation of said sheave 54 by releasing clutch plate 58, thus preventing the turning of by-pass valve to any further degree, and enabling said by-pass valve to return to its original position under the action of the weight 70.

Q. 44. When the circuit is broken at 84, 85, 86 and 87, what magnets are de-energized?

A. These contacts control or limit the energization of magnets 15 and 16. When shaft 20 has rotated to its limit in one direction the energized magnet which brought about this rotation is de-energized to prevent further rotation in the same direction; and when movement has reached its limit in the opposite direction, the other magnet is de-energized to prevent further movement in such direction.

Q. 45. What is the object, as you make it out, of providing the means you have just discussed for de-energizing magnets 64 and preventing further movement of the by-pass valve, and of breaking the circuit through the magnets 15 or 16 which, when energized, caused rotation of shaft 12 and a consequent rotation of shaft 20?

A. Magnets 64 may be de-energized through the lift-

ing of arm 74, independent of magnets 15 or 16. These latter magnets are de-energized for the purpose of preventing a jamming and consequent breaking in the governor parts. Magnet 64, on the other hand, is de-energized when the by-pass valve has reached an open position to permit of its slow closure independent of any subsequent movement taking place in shaft 20.

Q. 46. What is the object of slowly closing the by-pass valve?

A. The object of slowly closing the by-pass valve is to accomplish a gradual retardation of velocity of water column in the main pipe at a slow and safe rate, to effect water economy, and without interfering with the necessarily quick action of the governor to accomplish good governing.

Q. 47. What pipe, as shown in the patent drawing, do you refer to in your last answer?

A. There is only a small portion of the main supply pipe shown in Mr. Lyndon's patent drawing, from which the by-pass pipe 47 leads.

Q. 48. That is, if I understand you correctly, to effect retardation of the flow in the pipe gradually?

A. Yes; in the pipe of which figure 1 is the lower terminal, connected to the turbine and by-pass.

Q. 49. And this retardation accompanies what movement of the water gate?

A. The water gate, whose shaft is shown at 21b projecting from the turbine case 2, has previously been closed through the rotation of shaft 20 and by-pass 48 has been correspondingly opened to provide adequate by-pass for the water no longer being required to main-

tain the load on the turbine. By-pass 48 then slowly closes gradually retarding the column of water in the pipe line, and at a rate which will not cause a dangerous water hammer.

Q. 50. And what would be the effect if there were an abrupt closing of the by-pass valve 48 at this time?

A. If the by-pass valve 48 were closed too quickly there would be a water ram produced in the pipe line just as there would be if the turbine gates were closed too quickly without a by-pass.

Q. 51. Please set forth somewhat more fully the controlling effect of the generator 8 upon the energization of solenoid 33?

A. The generator 8 is responsive to speed changes, and any change in speed of the dynamo 8 causes a variation in its voltage, and, therefore, in the supply of current to the solenoid 33, causing thereby a variation in the pull of said solenoid against its corepiece in proportion to said speed changes of dynamo 8.

Q. 52. You have testified that you are conversant with electrical matters and hydraulic engineering. Have you similarly had occasion to come into contact with patents relating to this class of apparatus?

A. Yes; I have.

Q. 53. In what manner?

A. I am the inventor and patentee of about 18 or 20 United States patents, and some few foreign patents. There are about probably 500,000 horsepower of water power apparatus in use involving apparatus of my invention and covered by my patents.

Q. 54. Have you any applications for patents at the present time pending?

A. Yes sir; I have several applications pending at the present time.

Q. 55. Who prepared the specifications for these applications and the drawings?

A. I prepared all of the applications and under my direction I have had the drawings prepared for all of my applications during the last two years. Previous to this I engaged patent attorneys to do this for me. Several of my pending applications are allowed but not yet issued.

Q. 56. Have you had occasion to examine any United States letters patent in connection with your engineering practice?

A. Yes; very frequently.

Q. 57. Prior to giving your present deposition in this case did you examine the Lyndon patent in suit?

A. Yes sir; I did, very thoroughly. The first time was some 4 or 5 years ago, and several times since then.

Q. 58. I will ask you if you can produce any drawing which purports to show the parts and features disclosed in the Lyndon patent in suit, arranged or displayed otherwise than in the drawings of the patent in suit?

Mr. Westall: Counsel for the defendant objects to the question and to the production of any such drawing as incompetent, irrelevant and immaterial. The patent speaks for itself.

A. Yes sir. To facilitate the examination of the drawings in the Lyndon patent I have prepared a draw-

ing showing the devices disclosed in the Lyndon patent, and which I now have before me.

Q. 59. By Mr. Blakeslee: Did you produce this drawing personally?

A. No sir; I had it prepared under my direction. I did some of the work on it.

Q. 60. What method or plan did you pursue in laying out this drawing or ordering it to be laid out?

A. I made a complete sketch showing the various parts and then had one of the draftsmen in my drafting room lay it out as a line drawing under my direction. I then lettered and numbered the various parts and shaded it so that it could be easy of examination.

Q. 61. What relation, if any, exists between the lettering and numbering on this drawing and the lettering and numbering on the drawings of the Lyndon patent in suit?

A. This drawing corresponds exactly in these respects to the drawings in the Lyndon patent.

Q. 62. What was your particular object in producing this drawing?

A. To make it easier for the examination of the court in tracing out the various parts and several movements of the different parts in the Lyndon patent.

Q. 63. Are there any differences between this drawing and the disclosure of the drawings in the patent in suit with respect to the connection, the control and the working inter-relation of the several parts and features?

A. No sir.

Mr. Blakeslee: The drawing under discussion is offered in evidence as Complainant's Exhibit C, and it is

asked that the same be so marked. In so offering this drawing it is stated that our purpose in introducing it is merely to assist in more clearly presenting the showing of the drawings of the Lyndon patent in suit, and particularly figure 1 thereof, for assistance in clarifying such disclosure, the complexity of structure shown in such figure 1 making the assistance of this drawing, while not necessary, useful in discussing and pointing out the issues involved. And this drawing is, of course, offered subject to correction, if correction be necessary, of any discrepancies which may exist between it and the construction disclosed in the drawings of the patent in suit. Nor do we offer this drawing as an agreed embodiment of the invention covered by the patent in suit where any such discrepancies may be found.

Mr. Westall: Counsel for the defendant objects to the introduction and consideration of the drawing offered in evidence, on the ground that it is not the best evidence, the patent in suit speaking for itself. And on the ground, further, that it has not been proven to be accurate in all details and might be misleading as to the actual operation of the device shown and described in the patent in suit.

Q. 64. By Mr. Blakeslee: Can you produce in this connection for the purpose of clarity a reproduction of figure 1 of the patent in suit on a larger scale?

A. Yes; I have here a photographic enlargement of said figure 1.

Q. 65. By whom was this enlargement produced?

A. By a photographer in San Francisco in my presence from figure 1 of the original patent which has al-

ready been marked for identification by the Examiner.

Mr. Blakeslee: The complainant offers in evidence the photograph just submitted as Complainant's Exhibit D.

Mr. Westall: Counsel for defendant objects to the receiving in evidence of the drawing or photographic copy referred to, on the ground that it is not the best evidence, and on the ground that it has not been sufficiently shown to be a copy of any of the drawings of the patent in suit.

The said photographic copy is thereupon marked by the Examiner as Complainant's Exhibit D.

Q. 66. By Mr. Blakeslee: Have you seen any apparatus embodying ~~the~~ governor construction combined with a water gate and by-pass wherein the by-pass and water gate under the control of the governor operated inversely, each with respect to the other?

A. Yes sir. I have examined such apparatus in operation at the Cottonwood plant of the Los Angeles aqueduct, and at the Division No. 2 plant of the Los Angeles aqueduct, and made photographs of them in company with Mr. Alfred H. Dahler on January 2nd of this year in Inyo County, California, these two plants being plants that were in use, furnishing regular electric service to the towns of Independence and Lone Pine by electric transmission.

Q. 67. When did you see these plants?

A. On January 2, 1914.

Q. 68. Can you produce any showing of what you saw on January 2, 1914, as related in your last answer, in Inyo County, California, on the line of the Los Angeles aqueduct?

A. Yes sir.

(The witness produces eight photographs.)

Q. 69. I will ask you to briefly state where each of these photographs was taken and as you so relate to mark them successively with identifying numbers.

A. The photograph which I have marked No. 1 ~~and E~~ in the upper right hand corner is the interior at the Cottonwood plant, showing the water wheel housing within which operates the water wheel for driving the generator on the right hand side. The governor in operation on the left and the rock shaft operating the water gate, and by-pass nozzle just above the floor on the left of the wheel housing.

The photograph which I have marked 2 in the upper right hand corner illustrates the connections below the floor, the floor plate being removed, which are operated from the governor rock shaft mentioned in photograph 1. This is also at the Cottonwood plant.

The photograph which I have marked number 3 in the upper right hand corner shows the governor in operation with the rock shaft above the floor for connecting to the water gate operating means, and by-pass. Also at the Cottonwood plant.

The photograph which I have marked number 4 ~~and H~~ in the upper right hand corner was taken by me on the same day at the plant known as Division Creek number 2 plant of the Los Angeles aqueduct, and shows the nozzle and water gate operating means and governor and connections to the by-pass.

The photograph which I have marked number 5 ~~and I~~ in the upper right hand corner shows in further detail the connections of the water gate, its operating means,

and the connections to the by-pass valve. This was also at the Division Creek plant number 2 above mentioned.

The photograph which I have marked number 6 ~~and~~ ~~J~~ in the upper right hand corner shows in further detail the governor with its returning devices and clutch set into operation by the controller for preventing the governor "over-running", and the connections between the governor and the water gate operating means and by-pass. This was also at the Division Creek plant number 2 above mentioned.

The photograph which I have marked number 7 ~~and~~ ~~K~~ in the upper right hand corner is an enlarged view of the upper portion of the governor, showing the parts of the clutch set into operation by the controller for preventing the governor "over-running". This is also at the Division Creek number 2 plant mentioned above.

The photograph which I have marked number 8 ~~and~~ ~~L~~ in the upper right hand corner is an enlarged view of the water wheel housing and pressure gauge of the water wheel unit at Division Creek plant number 2 which I have previously mentioned.

Q. 70. Please state who took these photographs.

A. I took all of the original negatives of these photographs and had the prints made at a professional photographer's in San Francisco under my direction. They are enlargements from the original negatives.

Q. 71. I notice in several of these enlarged photographs the picture of some person. Who, if you know, is represented in these likenesses?

A. Mr. Alfred H. Dahler appears in photographs 3,

4 and 1. He is the party who I previously testified accompanied me on this trip.

Q. 72. Can you produce any further photographs showing what you found on the aqueduct in Inyo county?
(The witness produces four further photographs.)

Q. 73. Please further briefly state where these photographs were taken, by whom, and what they show.

A. The photograph which I have marked number 9 ~~and M~~ in the upper right hand corner is an exterior view of the Cottonwood plant with Mr. Dahler, previously mentioned, in the foreground. This shows the water discharging from the power house while the apparatus shown in the previous photographs of the Cottonwood plant was in operation.

The photograph which I have marked number 10 ~~and N~~ in the upper right hand corner is also an exterior view showing in further detail the discharge of the water from the apparatus in the Cottonwood plant to which I have previously testified, Mr. Dahler likewise being in the foreground.

The photograph which I have marked number 11 ~~and O~~ in the upper right hand corner is a photograph of one of the electrically operated dredges in the Los Angeles aqueduct to which the power plants at Cottonwood and Division Creek number 2 supplied power, the transformer station for electrical connections being shown on the float just back of the dredge. This dredge is on the line of the aqueduct between Lone Pine and Independence in Inyo County.

The photograph which I have marked number 12 ~~and P~~ in the upper right hand corner is an exterior view of

the Division Creek number 2 power plant previously testified to, showing the discharge tailrace from the power house into the balancing reservoir, which latter reservoir feeds to the division plant number 1.

Q. 74. Who took each of these photographs?

A. They are prints from the original negatives taken by me and developed, printed and mounted under my instructions for the purposes of this case.

Q. 75. For assistance in making reference to these twelve photographs, I will ask you to mark each one testified to by its distinguishing figure, with the name of the plant or the place of the location.

A. I have so marked all of these photographs.

Mr. Blakeslee: Complainant offers in evidence the photographs just produced and discussed, twelve in number, and the Examiner is asked to mark the same consecutively in accordance with the numbers thereon, Complainant's Exhibits respectively E, F, G, H, I, J, K, L, M, N, O, P.

Mr. Westall: Counsel for defendant objects to the introduction of these photographs just numbered, and each of them, on the ground that they are incompetent, irrelevant and immaterial; that no proper foundation has been laid for their introduction; that it has not been shown that they affect any of the issues in this case.

Mr. Blakeslee: In view of counsel's objection, we now call upon the defendant to produce any and all drawings, blueprints, maps, diagrams, sketches, specifications, and contracts, which were followed or called for or disclosed or illustrate or explain the power plants installed by the City of Los Angeles, the defendant, upon the line

of the Los Angeles aqueduct, in Inyo County, California. As a foundation for this request, we point out to counsel for defendant that the present witness in making out this, his prima facie case has testified that in the two plants, namely, the Cottonwood plant and the Division Creek plant number 2, he saw within the present month, namely, on the 2nd day of January, 1914, the following construction and inter-relation of parts and features, to-wit: A governor, a water gate, a by-pass, a means whereby the water gate and by-pass are inversely operated under the control of the governor. And we give notice that unless production of these enumerated things is made by the defendant before the completion of the prima facie case, we shall be compelled to initiate steps to enforce the production of the enumerated documents, papers, drawings and other things called for, as the court may direct, or, having previously requested the assistance of the defendant in inspecting and demonstrating these plants, we shall be compelled to ask the court for an order of inspection; or we shall be compelled to take both procedures if we so elect. It is further stated that complainant ~~when~~^{is} attempting to make out his prima facie case with the best of material and opportunity which are available, in order that the court may have before it as fully as possible the nature of the cause of action and the facts which we contend to support the same.

Mr. Westall: Counsel for defendant denies that complaint has made out any case or has made any showing which should entitle the complainant to the production of the documents or records which have been re-

quested. There is absolutely no evidence offered tending to show an infringement of the patent sued upon, and it has not been shown in what respect the different records enumerated would be competent or material evidence upon any issue in this case. Furthermore, the request is of a very general and vague nature, not defining what complainant conceives he is entitled to have produced upon this hearing. Counsel for the defendant denies that the witness has testified as was stated by counsel in his demand for the records and papers which he has requested, and states that even if the testimony of the witness had been as stated it would not be determinative and it would not even be a *prima facie* showing sufficient to base the request which has been made for the production of the documents which have been called for. Counsel for the defendant denies that any showing has thus far been made as to infringement by the defendant of the patent in suit. Counsel for the defendant further states that the records and documents called for relating to the construction of the aqueduct are not shown to have any pertinence to any issue in this case.

Mr. Blakeslee: As to what the witness testified the record speaks for itself. The defendant is given this opportunity to enable these issues to go fully before the court or to assist in such presentation, and the notice and request just given stand of record.

The Examiner thereupon marks the photographs last offered in evidence respectively as Complainant's Exhibits E, F, G, H, I, J, K, L, M, N, O, and P.

Q. 76: By Mr. Blakeslee: Can you produce a map or showing of the location of the Cottonwood power plant

and Division Creek power plant number 2 as to which you have just testified?

Mr. Westall: Counsel for the defendant objects to the question as incompetent irrelevant and immaterial. The location of the power plant spoken of not having been shown to have any pertinence to this case and not being within any of the issues raised by the pleadings herein, is irrelevant, immaterial and incompetent.

Mr. Blakeslee: The attention of the defendant is called to the pleadings in this case which specifically refer to certain power plants in Inyo County, California.

(The witness produces a map entitled "Map showing location of power plants along the line of the aqueduct and surrounding country, June 30, 1910, taken from the third annual report of the Los Angeles aqueduct, with changes.)

Q. 77. By Mr. Blakeslee: Please note, if you can, upon this map by lead lines and the letters A and B, the plants which I have referred to in the previous question.

A. I have marked in ink an arrow marked "a" pointing to the Cottonwood plant on the map; and an arrow marked "b" pointing to Division Creek plants numbers 1 and 2.

Q. 78. Where did you obtain this map?

Mr. Westall: Counsel for the defendant objects to all these questions relating to this map on the ground that they are incompetent, irrelevant and immaterial, it not being shown what relation either of these plants have to these proceedings.

A. This map I took from the printed report entitled

“First annual report of the bureau of Los Angeles aqueduct power”, dated June 30, 1910, and which map served as a fronticepiece thereto.

Mr. Blakeslee: We offer in evidence the map just produced as Complainant’s Exhibit Q.

Mr. Westall: Counsel for the defendant objects to the receiving in evidence of the map, on the ground that it is incompetent, irrelevant and immaterial. It is further objected to as not being the best evidence, no foundation having been laid for it, it not being fully identified as an accurate representation of the plants and their surroundings which it purports to represent.

Q. 79. By Mr. Blakeslee: Where did you obtain that report?

Mr. Westall: Counsel for the defendant objects to the question as incompetent, irrelevant and immaterial, and not the best evidence.

A. I obtained this report and several others from the office of the Los Angeles aqueduct power department on the 11th floor of the Central building in this city within the last two years.

The Examiner thereupon marks said map as Complainant’s Exhibit Q.

Q. 80. By Mr. Blakeslee: During the last two days have you had occasion to meet anybody in the office of the city attorney of Los Angeles, California?

Mr. Westall: I object to the question as incompetent, irrelevant and immaterial, and having no bearing on any question involved in this case.

A. Yes sir.

Q. 81. By Mr. Blakeslee: With whom did you make that call?

A. I called on Mr. Burnell, assistant city attorney, in company with my counsel, Mr. Blakeslee, yesterday morning.

Q. 82. At that interview do you remember anything being said with relation to inspecting the power plants on the Los Angeles aqueduct known as Division Creek power plant and the Cottonwood power plant?

Mr. Westall: The question is objected to as incompetent, irrelevant and immaterial.

A. Yes sir.

Q. 83. By Mr. Blakeslee: Please state what you recollect as having heard in that connection at that time?

Mr. Westall: The last objection is repeated and the further objection is made that the evidence is hearsay and the question calls for hearsay evidence.

A. Mr. Burnell stated that it had been his intention that every facility be given to Mr. Blakeslee and myself to inspect any and all apparatus in any way involved in this case at any property of the city of Los Angeles.

Q. 84. By Mr. Blakeslee: Was anything done at that time in connection with the consideration of such inspection?

Mr. Westall: The question is objected to as incompetent, irrelevant, immaterial, and having no tendency to affect any of the issues in this case.

A. Mr. Burnell stated that he would transmit the statement above testified to to the newly appointed counsel for the defendant in this case.

Q. 85. By Mr. Blakeslee: Was anything further done at that time in this direction?

A. He dictated a letter in my presence which he stated would be transmitted to the newly appointed counsel, setting forth therein a statement that he had at an earlier date made in these proceedings ^{meet} agreeing that such investigation be fully allowed and facilitated as far as it lay in the power of himself and his office to do, so as to properly and completely arrive at the facts in the case most expeditiously.

Q. 86. To whom was that letter directed, if you recollect?

Mr. Westall: Counsel for the defendant objects to the question as calling for secondary evidence and as incompetent, irrelevant and immaterial.

A. To counsel now present for the defendant, and Mr. Strause.

Q. 87. By Mr. Blakeslee: Was that letter dictated in your presence?

A. It was.

Mr. Blakeslee: In view of the last testimony given by the witness we again reiterate our notice and demand given at this session for full assistance in inspecting any and all plants for the generation of power along the line of or operated in conjunction with or by the water flowing through the Los Angeles aqueduct, and more particularly, as specified, the plants known as Division Creek plant number 2 and Cottonwood plant or Cottonwood Creek plant, all in Inyo County, California.

Mr. Westall: Counsel for the defendant denies that there has been any demand so far made for full assistance

in inspecting or any kind of assistance in inspecting the plants mentioned, and also denies any right, so far as the record here shows, to such an inspection.

Mr. Blakeslee: If there has been any lack of point and directness and strength in the demands along these lines made, they are to be understood as repeated with all such qualities.

Q. 88. Will you kindly refer to photographs, being Exhibits E, to P inclusive, and more specifically point out what they represent, and relate particularly what you witnessed in respect to the construction and operation of any apparatus therein shown pertinent to water wheels, water gates, by-passes, by-pass valves and governors on the occasion of your visit to the Cottonwood power plant and Division Creek power plant number 2 in Inyo County, on the 2nd of January, 1914? In connection with your answer please note in ink upon these photographs briefly the names or designations of the parts or features to which you refer in answering.

Mr. Westall: Counsel for defendant objects to the question as incompetent, irrelevant and immaterial.

A. Referring now to Exhibit E which shows a water wheel unit driving a 750 K. W. generator plant, A indicates the water wheel housing within which operates the water wheel supplied with water from a pipe line extending under the floor, through gate valve B, said pipe line having at its terminal a water gate for varying the flow of water to the water wheel, and in combination therewith a by-pass valve and connections for operating said by-pass inversely to said water gate, which water gate and by-pass are located under the floor plates C.

Said water gate and by-pass are actuated through connections below said floor plate and by rock shaft D and connection E, and Lombard governor F. And said governor having power means for shifting said connection E and D, which power means are set into operation by a controller, which controller is actuated by fly balls G, responsive to the speed variations of the water wheel shaft, through the pulley H and belt, to the water wheel shaft; the water wheel shaft is shown also at I. The shaft also carries the rotating portion, or field of the electric generator, the armature of which is shown at J. The returning devices of the governor are shown by the rod connection K, links and piston rod L, and the clutch in combination with said returning means, which is set into operation by the controller actuated by the fly balls G to prevent the governor "over-running" as shown at M. I will mark corresponding parts throughout these photographs with the same letters.

In this photograph F, D shows the rock shaft actuated by the governor for setting into operation the gate controlling means and by-pass. In this plant the water gate actuated by the governor is what is usually termed a needle valve, which is mounted upon the stem end, said stem extending through the packing of glands supported on the casing O, and having at its other extremity the needle valve for varying the outlet area of the nozzle to proportion the water discharged there through to the load requirements of the water wheel. This water gate stem is actuated from the governor through the connecting lever P, link Q, floating lever R, pin S, thus shifting the valve stem N of the water gate or needle from

the action of the Lombard governor F in photo E, to correct for speed variations. The floating lever R above mentioned is pivoted at the point T and has mounted at its other extremity a connection U to by-pass valve mounted in a by-pass pipe from the main water nozzle pipe, so that as the water gate stem N is moved in one direction the by-pass valve stem connected with U is moved in a reverse direction through the action of the lever R about pivot T. Any movement of rock shaft D, connected with the governor, therefore brings about a corresponding movement in the water gate connected with N, and a reverse movement of the by-pass valve connected at U about the pivot T. I may state that floating lever R is double. That is, it extends on both sides of stem N and connection U and connection Q, and the second portion of this lever is shown in its upper part at V.

Referring now to photo G, F, as before, illustrates the main portion of the Lombard governor, G the element sensitive to speed variations, H the connection to the water wheel shaft, so that G will be sensitive to its speed variations; I represents the water wheel shaft; J represents the stationary portion of the generator; W illustrates the cylinder whose piston shifts the rock shaft D through the connections X, which connections also shift the governor return rod K and clutch mechanism M, set into operation from the controller which actuates W, from the speed element G. Said controller is shown at Y. The power supply for operating cylinder W is supplied by the oil pump Z, operated from the water wheel shaft I by a belt.

DIRECT EXAMINATION (Resumed)

January 16, 1914, A. M.

The Witness: Passing now to the photographs taken at Division Creek number 2 plant on January 2, 1914, by me, and previously testified to, and referring to photograph H, this illustrates the housing containing the water wheel, which I have marked AA; the generator, which I have marked JJ; the governor is pointed to by the arrow BB; the element sensitive to the speed of the water wheel, being fly balls CC, actuated by pulley DD and the belting clearly shown to the water wheel shaft passing between AA and JJ; the upper portion of the controller valve of the governor, which is sensitive to speed variations, is shown at EE; the power means set into operation by said controller valve EE is shown at FF. This is for the purpose of shifting the water gate through the gear connections GG in either direction, under the action of the controller valve EE is shown at FF. This is for the purpose of shifting the water gate through the gear connections GG in either direction, under the action of the controller valve, said water gate being shifted through the rock shaft HH, the connecting rod II, lever KK, rock shaft LL, the water gate being in this plant a valve of needle shape mounted upon the stem MM, connected by lever with the shaft LL, said lever NN being shown in photograph I. There are under the water gate connections OO to the by-pass valve, which, through the action of the lever NN on the rock shaft LL, moves inversely to the movement of the water gate on the stem MM whenever the rock shaft LL is shifted by the rock shaft BB.

The water gate on the stem MM and the by-pass valve on the stem OO are mounted in the nozzle casting PP, supplied with water from connections QQ to the main water supply pipe.

Referring now to photograph I, this being an enlarged photograph of a portion of the apparatus shown in photograph H, it will be seen that QQ is the main for water supply to the nozzle pipe PP, the water gate valve being mounted upon and actuated by the stem MM through the upper portion of the double lever NN, actuated by the lever KK from the balance of the governing apparatus through the rod II. Connection to the by-pass valve is made from the lower portion of the double lever NN through the pin RR, such that inverse movement of the by-pass connections OO and SS and by-pass valve controlling the by-pass outlet of nozzle PP, whenever movement of the water gate and stem MM is made through the rock shaft LL. The water wheel actuated by the flow of water through the nozzle PP under the control of the water gate on stem MM is contained within the housing AA.

Referring now to photograph J, AA is the water wheel housing in which rotates the water wheel on the shaft TT, which drives through belting to the pulley DD to the fly balls CC which are therefore sensitive to speed variations in the water wheel shaft TT; the movement of the fly balls upon a speed change in the shaft TT occasions a shifting of the valve stem VV, carrying the pinion UU, said stem actuating the controller EE, admitting pressure fluid to the cylinder FF, actuating the water gate and by-pass valve in either direction, through con-

nections II, lever KK and rock shaft LL. Movement of the rock shaft LL when affected by the governor causes the swinging of double lever NN which is connected at its upper portion to the water gate stem MM, and at its lower end through connections SS to the by-pass valve, both the water gate and by-pass valve being mounted in nozzle PP which has an outlet control by the water gate for supplying more or less power water to the water wheel, and a by-pass outlet clear of the water wheel controlled by the by-pass valve connected with connections SS. This nozzle is supplied with water from the main pipe line. Through the connections NN, upon movement of the shaft LL, a reverse movement is transmitted between the water gate and the by-pass valve, such that upon the opening of the water gate the by-pass valve moves in a closing direction, and the closing of the water gate causes the by-pass valve to move in an opening direction, thus maintaining the water flow in the pipe line constant during a governing movement. Upon the completion of the governing movement the by-pass valve slowly resumes its normal position under the action of parts shown in photograph I as dashpot OO, springs WW. The governor returning devices are shown on photograph J as XX, and the clutch actuated by the movement of the controller EE for controlling the return of said controller valve EE through the instrumentality of rock and pinion UU, is shown at ZZ. Through the instrumentality of the needle valve this is automatically adjusted during governing movement at YY. The movement of this valve YY automatically is for the purpose of proportioning the

rate of return effected by the oil dashpot on the stem XX proportional to the amount of gate movement demanded from the controller valve EE, actuated from the fly balls CC to meet the necessary speed correction by a greater or less movement of the water gate and reverse movement of by-pass valve, proportioning the water supplied to the wheel to the new load. When a considerable change of load on the water wheel has occurred a considerable movement of the gate valve stem MM is made by the governor, and, through the governor clutch in the returning mechanism shown at ZZ, a considerable movement of the oil by-pass valve YY is made, thus permitting a quicker return of the governor. Whereas if a small change in load on the water wheel occurs, a small movement is made in the clutch ZZ, opening but slightly the valve YY, and thus requiring a longer period proportionally in the return movement, because the oil flowing from one side to the other in the dashpot will take a longer period of time to make the requisite movement through the slightly opened valve YY than where the valve YY has been opened to a greater degree.

This governor action, causing a variable rate of control is shown more clearly in the enlarged portion of the upper part of the governor in photograph K, in which CC, as before, are the fly balls actuated from the water wheel shaft by the pulley DD, causing a movement of the controller stem VV for shifting the controller valve, UU, being the rack and pinion, the shifting of which latter causes a return of the valve stem. YY is the needle valve controlling the flow of oil from one side to the other of the dashpot which I have marked "dashpot",'

which valve YY is automatically opened or closed a greater or less amount by the shifting of the clutch ZZ through connections XX, actuated by controller valve EE.

Photograph L shows at AA the water wheel housing, at TT the water wheel shaft and belting driving to the governor element responsive to speed changes, and shows the water gauge indicating the pressure of water in the supply pipe nozzle and by-pass connections, and which I have marked "Water pressure gauge".

At the time of visiting these plants on January 2, 1914, the ^{second} water wheel unit in the Cottonwood plant was operating and governing automatically with the governor as shown in the photographs E, F and G, and regularly supplying electrical service, the governor operating automatically, the water gate and element responsive to the changes of speed in the water wheel actuating the controller for shifting the water gate in either direction, combined with connections operating inversely to the movement of the water gate and by-pass valve, and means whereby the by-pass valve was returned to its normal position after the completion of a governing movement.

Mr. Westall: Counsel for defendant at this time moves to strike out the testimony after the marking of the various photographs, as not responsive to the question.

Mr. Blakeslee: The attention of the court is called to the fact that the question involved a statement of what witness saw at the plants under discussion, such statement to be given in connection with the discussion of the disclosures of the photographs in evidence.

A. —and a water wheel governor responsive to variations in speed of the water wheel shaft, actuating a controller for shifting the water wheel gate in either direction, and returning means of said governor, and a clutch actuated by said controller and acting to return said controller to its inoperative position so as to prevent “over-running” of the water wheel; and in said water wheel unit a governor responsive to changes of speed in the water wheel shaft, means to set into operation by said speed sensitive means for the purpose of shifting the water gate in either direction, a by-pass and a by-pass valve, controlling said by-pass, connected with said water gate so as to move whenever the water gate is moved inversely thereto.

In visiting Division Creek number 2 plant on the same day, I found there apparatus embodying exactly the same elements, said water wheel, however, not being in operation in supplying current at the time but operatively connected with the pipe line and having water discharging through the by-pass valve. In company with Mr. Alfred H. Dahler I operated the apparatus by hand control, setting into movement the governor and water wheel and water wheel shaft at this Division Creek plant, and actuated the various governor elements, satisfying myself that the action takes place in the various elements exactly as described above in connection with the operating water wheel at the Cottonwood plant and as above mentioned.

While at the Cottonwood plant on January 2, 1914, I also examined the governor on the second unit, which unit was not in operation at that time. The governor

was in all respects an exact duplicate of that operating in connection with the first mentioned unit in this same plant, up to and including the governor rock shaft as shown at X in photograph G, and said governor contained the clutch and operative parts all as shown on photograph K at the Division Creek plant.

Q. 89. By Mr. Blakeslee: You have referred to one Alfred H. Daehler in your testimony. Can you more particularly identify him?

A. Yes; I have met Mr. Daehler before in your office and also on the day of leaving here I met Mr. Daehler through you, and I have since coming here on the present trip seen him several times in your office.

Q. 90. Is he present in this room at this time?

A. Mr. Daehler has just come into the room.

Q. 91. Have you ever made any trip to the Cottonwood power plant and Division Creek power plants concerning which you have testified, other than the trip as to which you have testified in your present deposition?

A. No sir. I visited these plants for the first and only time on January 2, 1914, in company with Mr. Daehler, by an automobile trip from Lone Pine to the several plants, and through Independence, and returned to Lone Pine on the night of January 2nd.

Q. 92. Do you remember meeting any persons at any of the places which you have just referred to?

A. Yes sir; by referring to my notes I can give you the names of several persons. (The witness refreshes his memory with references to these names by reference to his notes.) I met the operator J. E. Baxendale, and Mr. R. P. Rigby, the latter in charge of the Cottonwood

plant. Our chauffeur who took Mr. Daehler and myself to the two plants, was Mr. N. M. Aiguer of Lone Pine.

Q. 93. Were any of these parties whom you have mentioned or any other parties whose names you can recollect, present at the Cottonwood or Division Creek plant or both when you inspected the same, and, if so, who and where?

A. Mr. Baxendale was present during our examination and the taking of photographs at the Cottonwood plant, and Mr. Aiguer was present during a portion of our examination and photographing of Cottonwood and during all of our examination and photographing at the Division Creek plant. Mr. Baxendale gave me this photograph of the interior of the power station at the Cottonwood plant, showing Mr. Rigby in the foreground and showing the two water wheel governors similar to each other to the degree I have previously testified, and which governors form a portion of the governing apparatus and control of the two water wheels shown on the right hand portion of the photograph. The nozzle apparatus controlling these two wheels and actuated by governors and forming therewith a complete governing equipment, is different. The unit in the immediate foreground and which was not in operation at the time we visited the plant, is actuated by what is known as a deflecting needle nozzle.

Mr. Blakeslee: The photograph just referred to by the witness is offered in evidence as Complainant's Exhibit R, Baxendale photo of Cottonwood plant.

Mr. Westall: Counsel for the defendant objects to

the introduction of the exhibit as incompetent, irrelevant and immaterial.

The said photograph is marked by the Examiner "Complainant's Exhibit R, Baxendale photo of Cottonwood plant."

Q. 94. By Mr. Blakeslee: Have you anything further to add to your testimony with respect to what you did when at the Cottonwood and Division Creek plants at the times as to which you have testified?

A. Yes. I made sketches of the elements and details that I have above testified in regard to and which I also photographed. These sketches were for the purpose of making a drawing illustrating fully the manner of operation of the water gates, by-passes, and connections to the balance of the governing apparatus at these two plants.

Q. 95. Can you produce anything which pictures or assists to fix January 2, 1914, as the day you arrived at Lone Pine to inspect the plants under discussion?

A. Yes, sir; I have my Pullman ticket for the night of January 1, 1914.

Q. 96. Where did you buy these tickets?

A. At the Arcade depot in Los Angeles.

Q. 97. Can you produce such tickets?

Mr. Westall: Counsel for the defendant objects to the question as incompetent, irrelevant and immaterial, the witness having already testified that he has been a visitor at the plant in question at the time mentioned.

A. Yes, sir; I have here yellow Pullman ticket 8243 for upper berth 2, car 12, on the night of January 1, 1914, from Los Angeles to Owenyo.

Q. 98. By Mr. Blakeslee: Where is Owenyo?

A. Owenyo is the station beyond Lone Pine. We left the train at Lone Pine, Inyo County, California.

Mr. Blakeslee: We offer in evidence the Pullman ticket referred to as Complainant's Exhibit S, Henry Pullman ticket Los Angeles to Owenyo.

Mr. Westall: Counsel for the defendant objects to the introduction and marking of the exhibit as incompetent, irrelevant and immaterial, there being no evidence connecting the use of the ticket with the particular trip about which the witness has testified.

The said Pullman ticket so offered in evidence is thereupon marked by the Examiner as "Complainant's Exhibit S, Henry Pullman ticket, Los Angeles to Owenyo."

Q. 99. By Mr. Blakeslee: What became of the other part of this ticket?

A. The Pullman conductor took it up, leaving me only the portion which has been put in evidence.

Q. 100. And that was on the trip commencing when?

Mr. Westall: That is objected to as incompetent, irrelevant and immaterial.

A. On the trip commencing from the Arcade depot at Los Angeles on the night of January 1, 1914, and continuing until I left the train on the morning of January 2, 1914, at Lone Pine, Inyo County, California.

Q. 101. By Mr. Blakeslee: Were you accompanied on that same train by anybody?

Mr. Westall: Counsel for the defendant objects to the question as incompetent, irrelevant and immaterial.

A. Yes, sir; Mr. Daehler accompanied me during the whole trip from the time of leaving Los Angeles until after leaving Lone Pine on the night of January 2, 1914,

when Mr. Daehler proceeded to Los Angeles and I to San Francisco.

Q. 102. By Mr. Blakeslee: Can you produce anything farther fixing the day of your inspection of the Cottonwood and Division Creek plants as testified?

Mr. Westall: Counsel for the defendant objects to the question as irrelevant, immaterial and incompetent, having been fully covered by the previous examination of this witness.

Mr. Blakeslee: I take it, then, that the defendant concedes that Mr. Henry and Mr. Daehler were at the said plants at the time and upon the day specified. If that is the case, we will not offer anything further in evidence on that point.

Mr. Westall: Counsel for the defendant does not make any such concession.

A. Yes, sir; I have a receipt from the chauffeur, Mr. Aiguer, who took Mr. Daehler and myself on the automobile trip from Lone Pine, first to the Cottonwood plant and then to the Division plant number 2, and then back to Lone Pine. I paid Mr. Aiguer in the hotel at Lone Pine, taking his receipt therefor, which I herewith hand you and which bears date January 2, 1914, and is signed N. M. Aiguer.

Q. 103. By Mr. Blakeslee: Did you see this receipt signed?

A. I did.

Mr. Blakeslee: We offer in evidence the receipt just produced as Complainant's Exhibit T, Aiguer receipt to Henry of January 2, 1914.

Mr. Westall: Counsel for the defendant objects to the admission in evidence and marking of the exhibit just

offered on the ground that it is incompetent, irrelevant and immaterial.

The said receipt so offered in evidence is thereupon marked by the Examiner as "Complainant's Exhibit T, Aiguer receipt to Henry of January 2, 1914."

Q. 104. By Mr. Blakeslee: You testified just now to the preparation of certain drawings from sketches made by you at the plants in Inyo County under discussion, for the purpose of setting forth in an assisting manner what is shown in the photographs Exhibits E to P, inclusive. Can you produce any such drawings made by you?

A. I can. I have here a drawing illustrating the various nozzle and by-pass parts of the governing apparatus for operating one of the units in the Cottonwood plant to which I have previously testified. As stated above, there were two units in this plant both controlled by what is known as Type R Lombard Governors. One of the units has under the control of its governor what is known as a needle deflecting nozzle. The other unit has under the control of the governor and for operating the water wheel what is known as a governor-controlled water gate or needle nozzle, with an auxiliary by-pass. I have prepared a drawing from my sketches and observations on this latter unit, illustrating the water gate, its operating means, the by-pass and by-pass valve, and its operating means connected with said water wheel gate so as to cause a movement of the by-pass valve inversely to the movement caused in the water gate operating means, and showing the connections for operating these several parts from the governor rock shaft. (Witness produces a line drawing.)

Q. 105. Are the several parts and features shown in this drawing likewise disclosed in any of the photographs in Exhibits E to P inclusive?

A. Yes, sir; they are shown in the photographs.

Q. 106. Will you please indicate upon this drawing the corresponding features which you find in any of said photographs Exhibits E to P inclusive, by the same reference characters?

A. Yes, sir. Referring to photograph Exhibit F, I have now marked upon the said line drawing similar parts with similar letters, as follows: D, the governor-actuated rock shaft; P, lever connection; Q, link connection; R, double lever connection from Q to water gate operating stem N through floating pivot connection S, fulcrum T and by-pass valve connection U. The water supply pipe has cast thereon a receiving branch for the water gate stem N, which branch terminates in the flange O, water being supplied through the said pipe in the direction of the arrow marked "to the water wheel," and through the by-pass connection in the direction of the arrow marked "to by-pass," water being received into said supply pipe from the side as indicated from gate valve B, under the floor plates C, shown on photograph Exhibit E, and which side connection to the nozzle I have shown sketched in ink as a broken pipe connection and marked with an arrow "Water supply pipe leading into side," said water supply pipe thus feeding water through the water wheel, or through the by-pass, depending on the operation of the water gate or needle valve which I have so marked "water gate" or "needle valve" and which is also shown projecting slightly beyond the end of the supply pipe; and the by-pass valve

which I have marked "by-pass valve." Upon any outward or opening movement of the by-pass valve effected by the governor through the connections and lever R to stem U, and at the end of said governor movement, a movement of the by-pass valve in a closing direction takes place at a slow rate of speed, so as not to introduce damaging inertia or ram effects in the pipe line, and to slowly retard the water in the main water supply pipe. This action occurs through the slow movement of the oil dashpot which is connected to the by-pass valve, the piston in said dashpot being mounted upon the rod U, so that a displacement of the by-pass valve toward closing direction may take place without further movement of the rod U, through the by-passing of the oil from one side of the dashpot around the piston to the other side of the dashpot through the adjustably controlled port whose adjusting screws are shown and so marked "adjusting screws."

Q. 107. Will you please mark upon this drawing the name of the plant as to the construction of which this drawing is pertinent?

A. I have marked the drawing "Cottonwood plant water gate and by-pass features operated in conjunction with Type R Lombard Governor."

Mr. Blakeslee: We offer this line drawing in evidence as Complainant's Exhibit U, Henry line drawing of Cottonwood plant water gate and by-pass features operated in conjunction with Type R Lombard Governor.

Mr. Westall: Counsel for the defendant objects to the introduction of the exhibit as incompetent, irrelevant and immaterial.

The said line drawing so offered in evidence is thereupon marked by the Examiner as "Complainant's Exhibit U, Henry line drawing of Cottonwood plant water gate and by-pass features, operated in conjunction with Type R Lombard Governor."

Q. 108. By Mr. Blakeslee: Have you prepared any further drawings from the sketches made by you at the time stated and at the plant stated in Inyo County, purporting to illustrate any of the features of the installations of said plants? If so, please produce same.

(The witness produces another line drawing.)

Q. 109. Did you make this line drawing personally?

A. Yes, sir. I had parts of it prepared in my drafting room and did a good deal of the work on it myself, and all of it was done under my direction.

Q. 110. Is the same true as to Exhibit U?

A. The same is true as to Exhibit U.

Q. 111. Please mark the parts and features of this drawing with the reference characters applied to any similar parts and features shown in photographs Exhibits E to P inclusive.

A. I have marked this drawing as requested by you, and ~~as~~ ^{as} it shows a line drawing the parts which are already illustrated in photographs I and J, the parts which I have marked with letters on said drawing correspond with parts similarly marked with the same letters on photographs I and J, QQ being the water supply pipe connection which feeds water under the control of the water gate for energizing the water wheel, the path of which is shown in the drawing, and also feeds water upon movement of the by-pass valve through the by-pass pipe connection. The path of the water in the by-pass

is clear of the water wheel and under the control of valve mounted with an oil dashpot, the piston of which oil dashpot is connected to the pivots RR by a piston rod, the double lever NN is mounted upon the rock shaft LL, actuated by lever connection KK through connecting rod II. Movement of the power cylinder of the governor FF (see photograph J), HH (see photograph H), causes a movement of the water gate stem MM, causing a movement of said water gate to vary the water flowing onto the buckets of the water wheel and the movement of rock shaft LL, which occasions such movement of the water gate through the double lever NN, shifts inversely to said water gate the by-pass valve, the oil dashpot OO through pin RR. After movement of the by-pass valve by the governor and the completion of governor movement, the by-pass valve is allowed to slowly resume its normal position through the passage of the oil from one side of the oil dashpot to the other around the piston through suitable ports under the control of the adjusting screws shown. I have marked this line drawing "Division Creek plant number 2, water gate and by-pass features."

Mr. Blakeslee: We offer in evidence the line drawing just discussed, as Complainant's Exhibit V, Henry line drawing of Division Creek plant number 2, water gate and by-pass features.

Mr. Westall: Counsel for the defendant objects to the introduction and marking of the exhibit as incompetent, irrelevant and immaterial, as not the best evidence, it not having been shown that the line drawing offered is an accurate copy of any copy of the original sketch made

at the time of the purported visit of the witness at the time and place as to which he has testified.

The said line drawing so offered in evidence is by the Examiner thereupon marked "Complainant's Exhibit V, Henry line drawing of Division Creek plant number 2, water gate and by-pass features."

Q. 112. By Mr. Blakeslee: Can you produce any mechanical showing or embodiment of the features you have marked in the drawings as "dashpot" in Exhibit K and as YY and ZZ and UU, and attendant features?

A. I can. I have here parts obtained from San Francisco agent of the Lombard Governor Company, exact duplicates of those in use on the Lombard governors in the two aqueduct plants.

Q. 113. These features, namely, those shown in the photographs, am I to understand, whatever they are, are exact counterparts in the features in the device you have just produced?

Mr. Westall: Objected to as leading.

A. Yes.

Q. 114. By Mr. Blakeslee: Please, in order that you may state fully as to this, point out any differences, if they exist, between this device and the corresponding device or parts of device as shown in the photographs, and which I have partially referred to, by the use of reference characters and the term "dashpot."

A. There are none.

Q. 115. Will you please now describe the operation of this device, coupling such description or statement with its effect in operation upon any other features of the installations of the Cottonwood and Division Creek

power plants, of which Exhibits E to P inclusive are photographs.

Mr. Westall: Objected to as irrelevant, incompetent and immaterial.

A. With the exhibit of these mechanical parts before me and with that portion carrying the spiral spring at the extreme left with the rack facing me, the connection on the extreme right is to be made to the parts actuated by the controller of the governor, which controller is responsible to the movement of the fly balls, and, therefore, to speed variations in the water wheel. The said connection is through a stem to a piston within the bronze dashpot and for regular operation the receptacle on top of said dashpot, as well as the dashpot itself, is to be supplied with oil. The bronze screw movable up and down, with a stem and valve at its lower extremity, and passing through the cover on the left hand side of the receptacle, is held in a closed position, by a spring in the white metal screwed to said receptacle, at all times when the clutch bearing the raised figures "2974" is in mid or inactive position. This clutch has a separating member, bearing raised figures "2975" from the stationary portion, which carries also a groove in which slides the rack. Any displacement of the rack in either direction within this carrier stationary piece is opposed by the fingers on each end held tightly against their stops by the spiral spring. On movement of the governor mechanism, brought about by the controller valve being shifted by the speed-sensitive devices, movement is therefor transmitted through the mechanical connections to the piston rod and piston of the dashpot, pulling the dashpot, due to the oil being allowed to by-pass very

slowly through it, and, therefore, displacing the rack within its carrier establishing then a spring pressure to rest^{on} the rack to its normal or central position, said spring pressure causing a flow of oil under the control of the adjustable valve in the oil dashpot receptacle. If the governor movement be quick, that is, at a rate faster than the oil will pass around the piston in the dashpot, the dashpot by-pass valve is raised through the spring-actuated rod in the white metal portion, which climbs or is forced up on one of the inclined portions of the jaw or clutch piece 2974, thereby opening to a greater extent the oil by-pass valve, the degree of opening being in a proportion to the degree of movement occasioned in the water gates. The greater the opening thus automatically established by the dashpot oil from the movement of the parts occasioned by the governor control, the faster will said dashpot return, under the action of the spiral spring, the rack to its normal position; and as said rack returns to its central or normal position, the oil by-pass valve is slowly caused to close under the action of the spring in the white metal portion on the dashpot receptacle, so that its movement in a returning direction is more retarded as said rack approaches its normal position. It will therefore be obvious that the rate of return of the rack is automatically controlled from the controller of the governor at a rate automatically adjusted so as to prevent the governor "over-running."

Q. 116. By Mr. Blakeslee: Can you produce any pictorial showing of the parts in the Lombard device just discussed, together with a table naming a means of identification of the several parts thereof?

A. I can. I have here a printed circular bearing half-tone reproductions of the Lombard Type R Governor, in which 33 illustrates a governor, two of which are in use at the Cottonwood plant, about which I have been testifying, and in which the parts 77, 48, 43, 105, 40, 114, 79, 74, are the portions reproduced in the mechanical device I have before me; and in the Division Creek number 2 plant the Lombard governor contains parts as indicated in figure 31 of the half-tone photograph of the Lombard Governor Company's circular, in which figure numbers 43, 81, 83, 74, 82, 40, 105, 104, 77, are the parts of the mechanical device that I have before me.

Mr. Blakeslee: We offer in evidence the Lombard device just discussed as Complainant's Exhibit W, Lombard Governor Device, and also offer in evidence the cuts and descriptive matter just discussed, as Complainant's Exhibit X, Lombard Governor Company illustrative folder of Lombard Governor Device.

Mr. Westall: Counsel for the defendant objects to the introduction of the Exhibits referred to and offered as incompetent, irrelevant and immaterial.

The Examiner thereupon marks the said device so offered in evidence as "Complainant's Exhibit W, Lombard Governor Device," and also the folder so offered in evidence as "Complainant's Exhibit X, Lombard Governor Company illustrative folder of Lombard Governor Device."

January 16, 1914, P. M.

E. F. SCATTERGOOD, subpoenaed as a witness on behalf of complainant, being duly sworn according to law, testifies as follows in answer to interrogatories propounded by Mr. Blakeslee:

- 156 27 insert "Mr. Blakeslee: The present witness
is excused subject to recall for further
examination, in order that the witnesses
subpoenaed at the hour of 2 P. M. on this day
may be at that time examined."
- 157 top of page insert "E F. Scattergood, sub-
poenaed as a witness on behalf of complain-
ant, being duly sworn according to law, testi-
fies as follows in answer to interrogatories
propounded by Mr. Blakeslee."

DIRECT EXAMINATION

By Mr. Blakeslee:

Q. 1. State your name, place of residence and occupation.

A. My name is E. F. Scattergood; I am forty-two years old and I reside in the city of Los Angeles; my occupation is that of an electrical engineer.

Q. 2. Are you connected with the city of Los Angeles at present in any engineering capacity?

A. Yes; electrical engineer in the department of public service, and chief electrical engineer in the power bureau in the department of public works.

Q. 3. How long have those connections existed?

A. I have been doing work in the department of public works since the fall of 1906, I believe; in the department of public service since the fall of 1906, first in a consulting way and since the fall of 1909 in regular employment.

Q. 4. Have you had occasion from time to time during the last year to go over the line of the Los Angeles aqueduct, including that portion of it lying within Inyo County?

Mr. Westall: Objected to on the ground that it is incompetent, irrelevant and immaterial.

A. I have been over most of it within the last year. I have been in Inyo County once during the month of April of last year.

Q. 5. By Mr. Blakeslee: During that month and that visit did you visit any power plants on the line of the aqueduct in Inyo County?

A. No, sir; I did not.

Q. 6. Have you at any time visited those power plants?

A. I have on a number of occasions since my employment with the city.

Q. 7. Can you give the names of any of those power plants so visited in Inyo County?

A. The Cottonwood Power Plant No. 1, and the Division Creek No. 1 and 2 power plants.

Q. 8. I submit to you a map which is marked Complainant's Exhibit Q, and ask you if you have ever seen such a map before.

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. This appears to be a map which I have seen before.

Q. 9. By Mr. Blakeslee: Can you locate upon that map any place to which you have been?

Mr. Westall: The question is objected to by counsel for the defendant as incompetent, irrelevant and immaterial, for the reason that the map has not been shown to be authentic, and for the further reason that the witness has not been properly qualified to testify as to matters inquired about.

A. The location of the Los Angeles aqueduct appears to be indicated by two parallel lines. I have been at one or another time along practically all of the length of the aqueduct except, perhaps, in the western end of the Antelope Valley.

Q. 10. Do you find upon that map the power plants to which you have referred in a previous answer?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial, and as vague and indefinite.

A. The Cottonwood No. 1 plant is indicated here and so marked in its approximate location; the Division Creek No. 1 and 2 plants do not appear on this print in a satisfactory way at all. Their general location is indicated by the words "Division Creek Plant," which I think indicates No. 2, or is intended to, rather than No. 1, which is a little further down stream.

Q. 11. By Mr. Blakeslee: How is the Cottonwood plant indicated on this map?

A. I have already stated that it is indicated as No. 1.

Q. 12. I mean what is the nature of the indication on the map?

A. A rectangular spot.

Q. 13. And any lettering accompanying?

A. "No. 1."

Q. 14. By Mr. Blakeslee: Any names accompanying that lettering?

Mr. Westall: This evidence is all objected to as being incompetent, irrelevant and immaterial to any issue in the present case.

A. The words "Cottonwood Plant" are above it.

Q. 15. By Mr. Blakeslee: Please state in a general way what the nature of your occupation was at the times you visited these plants.

A. My work had to do with advising in regard to the installation of these plants and other electrical works along the line of the aqueduct for the purpose of supplying power for aqueduct construction.

Q. 16. What is the nature of the plants which you have testified to as the Division Creek plant and the Cottonwood plant?

A. They are hydro-electric generating plants, containing water wheels, electrical generators and transformers and other electrical apparatus.

Q. 17. From what source is the water taken for the operation of these water wheels?

A. From Cottonwood Creek and from Division Creek.

Q. 18. And after utilization in these plants where is the water taken care of?

Mr. Westall: That is objected to on the ground it is incompetent, irrelevant and immaterial.

A. The Division Creek No. 2 plant discharges in a concrete spillway or basin which may, in turn, be discharged so as to run back into the creek or into the pipe line of the Division Creek No. 1 plant; and from the No. 1 plant it runs back into the creek. From the Cottonwood plant it was discharged originally from the plant and allowed to run a comparatively short distance across the country to Owens Lake. The last time I saw it, it was arranged to be discharged into the so-called Los Angeles aqueduct.

Q. 19. By Mr. Blakeslee: Does the outflowing water from both of these plants proceed so as to be impounded within any general system of water collection or to supply any source of water utilized in any particular manner?

Mr. Westall: Counsel for the defendant objects to the question as calling for evidence which can have no pertinency or relevancy to any issue in this case.

A. I have already testified in regard to the Cottonwood water passing through the plant referred to. The Division Creek water comes back and along down in a natural channel of the Division Creek, as I recollect it,

which water has been used more or less for irrigating purposes on the Rickey ranch which belongs to the city of Los Angeles—I am not sure whether any part of that water is owned by any other party than the city of Los Angeles or not—and on down toward the Owens River, the Los Angeles aqueduct being between the power plant and the river, so that such water as is wasted might be diverted into the aqueduct.

Q. 20. By Mr. Blakeslee: What means is employed in the Cottonwood plant for controlling the supply of water to the water wheels of that plant?

A. In the Cottonwood No. 1 unit there is what is known as a deflecting nozzle, controlled by a governor, and in which there is inserted a so-called needle which may be controlled by hand. In the Cottonwood No. 2 water wheel unit there is a fixed nozzle in which is inserted a needle and from which the water discharges directly and at all times against the buckets of the wheel, and an auxiliary nozzle connected to the water line a short distance from the main opening already referred to, containing a needle. The needle of the main nozzle is controlled directly by means of the governor. The needle of the auxiliary nozzle is controlled in large part by means of springs. It may be controlled by hand, as I recollect. And, indirectly, and on very rarely occurring occasions, it is controlled in a degree by the governor. It is connected to the governor through a hydraulic cylinder, the action of which in effect is to nullify the effects of the governor, except a partial control on rare and exceptional occasions in unusually sudden shutting down of the flow of water to the main nozzle.

Q. 21. Is that connection for taking care of such ex-

treme fluctuations always maintained in this installation?

A. The normal condition is that it would be in readiness to operate under such conditions as I have described.

Q. 22. What is the nature of the means controlling supply of water to the wheel of the Division Creek plant?

A. It is similar to the means described supplying the Cottonwood No. 2 unit. There is but one unit in the Division Creek plant.

Q. 23. In these units which employ the main needle and the auxiliary needle, how many nozzles are there?

A. My testimony has been full in regard to that. There is a main nozzle discharging the water onto the wheel, and an auxiliary nozzle. Two in all.

Q. 24. And these needle control respectively these nozzles?

A. Yes, sir.

Q. 25. In each of these two-needle and two-nozzle installations what is the relation between the two needles with respect to controlling the flow of water through the respective nozzles?

Mr. Westall: The question is objected to as vague and indefinite.

A. There is no relation whatever that can be described, except in the instances which I have already described in case the needle of the main nozzle closes the orifice with unusual rapidity,—which may occur in rare instances in such plants—the auxiliary nozzle orifice will be opened somewhat momentarily by the inter-connection through the hydraulic cylinder, and immediately

start to close, and in a very short space of time completely close, due to the operation of the springs in conjunction with the hydraulic cylinder.

Q. 26. By Mr. Blakeslee: What is the result of this operation of the auxiliary needle in conjunction with the sudden closing of the main needle?

A. The result is to prevent dangerous rise of pressure which might endanger the pen stock line or, at least, that is the intended result.

Q. 27. What occurs at this juncture with respect to speed of water wheel rotation?

A. I cannot undertake to answer that question, because the speed of water wheel rotation depends upon the load conditions and other conditions, and would be erratic and uncertain at such a time, and such uncertain condition is the very cause of these unusual conditions referred to as to the closing of the nozzle.

Q. 28. Assuming there is a diminishment of load in this unit, or, we will say, a sudden diminishment of load, what occurs with respect to the volume of water passing the main needle for projection against the wheel buckets?

A. That would be decreased by the action of the needle directly controlled by the governor, in order to suit the amount of water to the remaining load.

Q. 29. And when the auxiliary needle coincidentally acts under these circumstances, what is the effect produced upon the speed of the volume of water passing the needle?

Mr. Westall: Objected to on the ground that the witness has not testified that the auxiliary needle coinci-

dentally acts. It is assuming an action which has not been shown.

A. On all occasions with this mechanism, in which there is a change of load resulting in a closing or opening of the orifice of the main nozzle, that is, a partial closing or opening, there is a corresponding rise in the pressure in the pen stock line or lowering of pressure in the pen stock line, and there is a corresponding increase in velocity in the water projected from the main nozzle, or a corresponding decrease in the velocity of the water. The auxiliary device does not prevent those changes in velocity. The only instance in which the auxiliary device comes into play is when the closing of the orifice to the main nozzle is at such rate as to cause such rise of pressure, were it not for the auxiliary device, as to cause possible damage to the pen stock line. To that extent there would be a lesser increase of velocity of the water ejected from the main nozzle than would otherwise be the case, but, nevertheless, a very material increase in the velocity of water.

Q. 30. By Mr. Blakeslee: Would you or would you not say that the extent of the diminishment of the velocity of the water under the conditions assumed in the last part of your last answer, upon the opening of the auxiliary nozzle, was a matter of degree dependent upon the responsiveness of the auxiliary needle, that, in turn, dependent upon the adjustment or state or strength of the controlling device thereof?

Mr. Westall: Counsel for the defendant objects to the question as calling for the opinion of the witness, the witness not having, so far as this record has disclosed, qualified to testify as an expert.

A. There is some room for adjustment one way or another, but not to such an extent as to alter the force of my former statement. The intent of this device, as claimed by the manufacturer and called for and desired by the city's engineers in purchasing such devices, was merely to protect the pen stock from excessive pressure, and not for the purpose of securing perfect governing, it being the intention that the governor should take care of such increases and decreases in the velocity of water ejected from the main nozzle as would not correspond to a dangerous rise in pressure. A device which would be such as to make possible an increase in flow in such auxiliary device, corresponding to a decrease in the flow of the main nozzle, was not to maintain the velocity from the main nozzle constant, or such as to provide or make possible a decrease in flow corresponding directly to an increase in flow in the main nozzle so as to avoid a decrease in the velocity of water ejected from the main nozzle, would require that at all times the total flow from the two nozzles be equal to the maximum flow from the main nozzle. The desire and purpose of the city's engineers in buying the devices, and the effect of these devices, is exactly the opposite of that, in that water is economized, and when there is no flow from the main nozzle there is no water passing, and the flow at all times of the water is approximately proportional to the load, except momentarily on such rare instances as I have referred to on several occasions in this testimony.

Q. 31. What have you to say with respect to the variation of the inertia effect of the column of water in the

pen stock or supply pipe, responsive to the action of this auxiliary needle?

A. I have stated that fully already, if I understand the import of your question, in that the momentary opening of the auxiliary nozzle, in the event of unusually rapid or sudden closing of the orifice of the main nozzle, a rise in pressure in the pen stock line at or near the water wheel is lessened to some extent, the intention being that it should be lessened to such an extent as not to be such as to be objectionable from the standpoint of the liability of the pen stock line.

Q. 32. If this auxiliary needle and nozzle were eliminated, would or would not there be a difference in velocity of water flow past the main needle upon moving the same toward closing position, resulting in a difference of velocity of the water wheel in rotation during governing action?

A. There would be and there is at all times, as I have already stated. The effect of the auxiliary device occurs simply in rare instances in which the closure is unusually rapid, and to prevent that increase going beyond a certain point—that is, the increase of pressure in the pipe line—and to that extent it affects the possible increase which might otherwise appear in the velocity of the water corresponding to the additional increase of pressure which would under those circumstances occur.

Q. 33. Then am I correct in deducing that the extent of service of the auxiliary needle and nozzle are dependent upon the extent of operation of the governing device, which is, in turn, controlled by the extent of fluctuation of load upon the water wheel?

A. Altogether upon the rate of that fluctuation. At ordinary rates of fluctuation of load, the auxiliary nozzle has no effect whatever, and it is only in case of sudden decreases in load that its effect occurs, and the effect in preventing increases of pressure in the pipe line and increases of velocity of the ejected water from the main nozzle is only partial.

Q. 34. Did you assist in or superintend personally the setting up and installation of these water supply and water supply-controlling devices at the Cottonwood and Division Creek power plants?

A. I was not in executive charge in the work of installing those plants. As I recollect, I was in executive charge of the operation of some of the power system and telephone system for some several years. But, in any event, I had to do with the preparation of the specifications on which they were purchased, and advised in regard to their installation.

Q. 35. Do you remember when both of these plants with the governing devices were installed?

A. I believe they were both installed in the year 1909, one in the early part of the year and one in the fall.

Q. 36. Do you remember from whom they were purchased?

A. The Abner Doble Company.

Q. 37. Of what place?

A. San Francisco.

Q. 38. Now, these cylinders to which you have referred and which affect the operation of the auxiliary needles, please state what comprises the main features thereof.

A. The main features of the hydraulic cylinders referred to are the usual cylinder body of cast iron, I believe, and a piston, and a piston rod passing through the center of one of the heads of the cylinder. There is a check valve in the piston itself, as I recollect, of such capacity as to nullify the connection between the governor and the needle of this auxiliary nozzle entirely when the governor is opening the needle of the main nozzle the fluid passing through unobstructed, in effect. And there is a smaller orifice which is not of such capacity so as to allow it to freely flow back and forth, but which comes into play when the action of the governor is reversed. That is closing the needle of the main nozzle.

Q. 39. What fluid is used in that cylinder, opposed to the motion of the piston?

A. Oil, I believe.

Q. 40. And the passage through which the oil passes, as I take it, from side to side of the piston, is that controlled as to capacity in any manner?

A. The larger orifice referred to, if not the smaller orifice, can be adjusted to some extent. I could not testify as to exactly what extent.

Q. 41. Would or would not that affect the responsiveness of the cylinder device with respect to predetermined thrust upon the piston rod?

A. That would affect the degree to which the action of the governor would be transmitted to the needle of the auxiliary nozzle. But the device is intended and has at all times been used in a way to produce results such as I have heretofore described.

Q. 42. When you say the device has always been

used in such and such a manner, do you mean by yourself or under your direct control, or at all the times when you were not in personal attendance?

A. At all times, to the best of my knowledge and belief. That is, that has been the purpose.

Q. 43. Who is at present in charge of the Cottonwood plant, if you know?

A. I do not know who has immediate charge at the present time.

Q. 44. Do you wish to differentiate at all between the Cottonwood plant and the Division Creek plant with respect to the testimony you have given relative to the nature of operation and effect of the auxiliary needle and its nozzle, and the governor, on the main needle and its nozzle, broadly speaking?

A. Not unless it is this way: That in installing the Cottonwood unit we were desirous of having a mechanism which would result in the saving of water, because the plant was used for construction purposes in the aqueduct, and while we had very little, or comparatively little, capacity in the ditch approaching the forebay and in the forebay, still it amounted to a great deal in toto as the total power which we could secure. The pen stock line at Cottonwood is about half the length of the line at Division Creek. There are two units at Cottonwood, so that the governor and main nozzle in their operation affect but one-half of the capacity of that pen stock line. So that we were not very particular about, and it is doubtful in my mind, as to whether this auxiliary device has ever been needed or of any value in that plant. I cannot testify that it is, and I could not testify positively that

it is not. I am satisfied that the conditions are such that there would not be any such severe pressures resulting, in all probability, as to damage the pen stock line. In the Division Creek line there is but one unit, and the pen stock line is, as I say, twice as long, and there was need of such a device. As to whether that device has ever been of value to the city I cannot say. I do know, though, seeing the results and being told by those there at the time, the results of the governor having shut down suddenly on one occasion, the device did not on that occasion protect the pen stock line. It opened up and suddenly there was a collapse, to a considerable extent, partially, more or less along a considerable distance at the upper end, the opening being down near the power house.

Q. 45. Do you know of any other such occurrences during the four years that the plants have been in use? *ri*

A. Not that resulted in immediate damage.

Q. 46. And at any time during those four years have these auxiliary needles and nozzles been discarded or disconnected so that they were not used during the operation of the main needle?

A. I do not know that they have been disconnected. The plants have not been run all the time.

Q. 47. Are these two units at Cottonwood always simultaneously used, or the contrary?

A. Sometimes they have been used simultaneously, but much the greater length of time during the operation of the plant there has been but one unit running at a time.

Q. 48. Are or not those plants or either of them at present in use for the generation of electrical energy?

A. There is one of the three units that we are referring to in these two plants running practically all the time.

Q. 49. What consumption is supplied by this last plant as now operated?

A. At the present time the small amount of energy supplied for the use of the city of Los Angeles from time to time in connection with its aqueduct. The most of the electrical energy supplied by that at the present time is supplied to the inhabitants in the southern end of the Owens Valley for their accommodation. It is practically at cost, as nearly as we could predict, and in response to their repeated requests for such service.

Q. 50. I hand you a printed piece of paper and ask you if you know what the subject matter is.

A. It is an application blank for lighting which is provided by the city for use in the town of Independence and of Lone Pine and immediate vicinity.

Q. 51. Those towns being in what county in California?

A. Inyo County.

Mr. Blakeslee: We offer in evidence the printed sheet just referred to by the witness, as Complainant's Exhibit Y, Los Angeles city application for lighting blank, form 156, and ask that it be so marked.

Mr. Westall: Counsel for defendant objects to receiving in evidence and marking of the paper referred to on the ground that it is incompetent, irrelevant, immaterial, and could not possibly affect any issue in this case.

Q. 52. By Mr. Blakeslee: I show you a number of photographs, being respectively Complainant's Exhibits

E to P, inclusive, and I will ask you if you recognize the showing of any of the same, and, if so, to please state in connection with each, briefly, what the illustration is. In so doing I will obscure the identifying wording appearing upon each.

A. That appears to be a photograph showing part of unit No. 2 in the Cottonwood plant, and in a large part the direct current exciter generator and water wheel driving the same, to which no reference has heretofore been made by me.

(The witness in this answer referring to Complainant's Exhibit E.)

A. I do not know that I can positively identify that (re-ferring to Complainant's Exhibit F). This, referring to exhibit G, undoubtedly is a picture showing one of the hearings and a portion of the governor and a small portion of the governing mechanism of the No. 2 unit in the Cottonwood plant.

Complainant's Exhibit H, I think, is undoubtedly the remaining portion of the governor and governing mechanism, and a small portion of the frame of the water wheel and generator at Division Creek No. 2 plant. That is the plant to which all my testimony has been referred. I have not described or testified in regard to the No. 1 plant except as to its existence and the water leading to it from the No. 2 plant.

Complainant's Exhibit I, I cannot say positively, but I think it is a more detailed photograph of the Division Creek No. 2 plant—of a portion of the governing mechanism.

Complainant's Exhibit J, is a view of the water wheel

and a portion of the governor and the governing mechanism of the Division Creek No. 2 plant.

There is nothing in that Complainant's Exhibit K that I can positively identify.

Q. 53. I call your attention to Exhibit J in connection with Exhibit K, and ask you if you can identify Exhibit K?

A. Exhibit K appears to be a detail of the same from J.

Complainant's Exhibit L appears to be a detail again from J.

Complainant's Exhibit M is a view of the Cottonwood power house.

Complainant's Exhibit N is another view of the same place.

Complainant's Exhibit O appears to be an electric dredge located in the open canal portion of the Los Angeles aqueduct in the Owens Valley.

Q. 54. From what source did it receive its electrical energy?

A. From these three power plants in combination.

Q. 55. Cottonwood and Division Creek?

A. One and two. Complainant's Exhibit P is a view at Division Creek No. 2 power plant.

Q. 56. Am I correct in understanding that all of these exhibits E to P which contain showings of power plants are the power plants to which you have previously testified, being in Inyo County, California, on the line of the Los Angeles aqueduct?

A. Yes, sir; on or near the line of the aqueduct.

Q. 57. I will ask you to produce a rough sketch in

outline illustrating one of the main nozzles and its needle, and one of the auxiliary nozzles and its needle, and connections between such needles and the governor, as being an embodiment, roughly, of your testimony as to the construction and installation of these parts, as embodied in the plants at Cottonwood and Division Creek power plants.

Mr. Westall—Counsel for the defendant objects to the question as irrelevant, immaterial, incompetent, and as having been fully covered in previous questions and answers of the witness.

A. Will you tell me what you want me to show? I think the proposition is quite unreasonable and unprofitable.

Q. 58. By Mr. Blakeslee: I want simply a paper which will reflect your testimony and which the Judge can look at. I will add this, however. In this connection I submit to you complainant's exhibits U and V, and ask you to inspect same, and if you find that you can refer to these or either of these and the parts thereof so as to answer the question without physically producing a sketch, you are at liberty to do so. And I will further state that in this question I am not asking that you reproduce or designate or indicate a reproduction of any specific details, but only the general provision and interrelation of parts and features.

Mr. Westall: Counsel for the defendant object to the request and the question asked on the ground that the matter has been thoroughly gone over and it has only the effect of incumbering the record with matters which have been heretofore thoroughly covered.

A. I cannot very well use those exhibits for the reasons that the names on either do not correspond to the names I have used in the testimony and the usual terms referring to the parts of this mechanism. I have been very free and full in my testimony and as accommodating as I can be in giving expression to the truth, and I cannot see how I can draw any sketch that would be of any benefit, and I prefer very much not to undertake it.

Q. 59. By Mr. Blakeslee: Referring to exhibits U and V, will you kindly point out any variation from such showing existing between the corresponding installations at the Cottonwood and Division Creek plants and such sketches, as to the general construction and inter-relation of parts and features?

A. I think I can say in regard to Exhibit V, the general relation here between what appears on the sketch as the upper nozzle is what I have referred to as the main nozzle, and on which is written in ink "To water wheel." The needle which is within this nozzle is referred to here as a water gate. That is, the pointed end of the needle which actually enters and closes the orifice. The lower portion of the sketch shows the hydraulic cylinder to which is connected from the line a bell crank which, in turn, is connected up to the shaft from the governor above and to the left, and this dash pot in turn is connected to the end of the needle in the auxiliary nozzle which is the other portion of the lower part of the sketch, the body of the hydraulic cylinder being connected to the stem of the needle, apparently, in this sketch, and the piston rod leading to the piston then being connected to the left towards the governor. The portion of this needle

which enters and closes the orifice or outlet from this auxiliary nozzle is marked here "By pass valve." Those terms "water gate" and "by pass valve" are not usual, to the best of my knowledge, as applying to this mechanism, and are not the ordinary engineering terms as applied to such devices, as I understand it.

Q. 60. Would the term "needle valve" come more within your approval as to the parts marked "water gate" and "by pass valve"?

A. That is half correct, in accordance with my idea. It is a nozzle, and a nozzle is a mechanism which has a definite meaning. That is, the term "nozzle" has a definite meaning in engineering. It is a mechanism formed for the purpose of ejecting water efficiently and to advantage from an engineering standpoint. This is a combination of a needle and a nozzle, or a needle nozzle, and not a needle valve nor a water gate nor a by-pass valve. It is improperly termed, according to my ideas of such terms.

Q. 61. And the needle and the nozzle in cooperation constitute, do they not, a controlling valve?

A. The nozzle is formed so as to eject the water and impart it, as it were, to the wheel; and the needle is inserted for the purpose of varying the amount of opening of the orifice or wholly closing it or leaving it wholly open for the purpose of controlling the flow of water or the amount of that flow.

Q. 62. So the nozzle, as you may say, is a self-contained ~~water~~ ^{valve} device? Is that correct?

A. Well, there is a shut-off gate or valve for the gate type which is supplied and shows in one of those ex-

hibits which I have identified as of the Division Creek unit, for the purpose of the ordinary function of a valve or gate. These mechanisms, that is, these needle nozzles, have their specific functions. I would like to speak more of the mechanism marked WW, which is one of the portions of the springs which in large part controls the actions of the auxiliary nozzle, there being a similar spring on the opposite side of the hydraulic cylinder.

Q. 63. Generally speaking, what is the function of those springs last referred to?

A. To close the orifice of the auxiliary nozzle and keep it closed, except on such rare occasions as have been referred to.

Q. 64. That is to say, close that valve after the governor action. Is that correct?

A. To close that valve after that governing action on those rare occasions that I have referred to, and keep it closed at all times during governing action except in those unusual instances of unusually sudden shutting down of the flow of water from the main nozzle.

Q. 65. Does or does not the testimony which you have just given in the last few answers refer generally to the nozzle and governing devices present in both the Cottonwood and Division Creek power plants?

A. My testimony, as referring to the sketch on Exhibit V, in answer to your question in regard thereto, would in principle apply equally to unit No. 2 in the Cottonwood and in Division Creek No. 2 plant. You will notice that that spring on that hydraulic cylinder and the function of the two act in conjunction with the operation of the governor to produce the results that I have

referred to, and necessarily prevent corresponding increases and decreases in the flow in the auxiliary nozzle with the ordinary decreases and increases in the main nozzle; and the auxiliary nozzles are not large enough to function in such a way as to prevent any change in the total flow of water or any change in the velocity of water ejected from the main nozzle, even though these spring and hydraulic cylinder devices were eliminated, and an appropriate direct connection of the governor substituted.

Q. 66. Referring to complainant's Exhibit I—to the photograph—I will ask you if you can identify what the parts referred to as PP and QQ are?

A. PP and QQ are branches at the lower end of the main nozzle, PP being a branch from which the stem of the needle comes out to the open through a packing gland, and QQ being a branch from the end of the pen stock proper to the nozzle casting.

Q. 67. Can you state what the parts designated as LL and KK are on this drawing, Exhibit I?

A. LL seems to be a shaft on which certain bell cranks are keyed and which turns in fixed sockets or bearings through small annular motions. KK is a bell crank keyed to the shaft LL and from which the shaft leads off to the left towards the governor, and, I believe, connects with the governor, being marked II.

Q. 68. Can you state the type of governor device which is used in these Cottonwood and Division Creek plant installations?

A. In the Cottonwood plant the governor is a Lombard governor primarily. That is, the governor mechan-

ism proper. It is of the vertical type. And in the Division Creek plant there is a similar governor, but of the horizontal type.

Q. 69. Do you see before you on the table any example of either of these types of Lombard governors?

A. Do you refer to this piece of mechanism? (Exhibit W).

Q. 70. I do if you do.

A. This looks to me as if it were a similar governor.

Q. 71. Of which type?

A. Of the Lombard type.

Q. 72. I mean as part of which kind—horizontal or vertical?

A. I don't believe I can tell.

Q. 73. That is the same type of Lombard device, is it, or is it not, used in both of those plants?

A. The governors as to their general functioning and mechanism resulting in such functioning, are similar.

Mr. Blakeslee: The witness picks up and refers to Complainant's Exhibit W.

A. I cannot testify that this is exactly like a similar mechanism on those governors, either one of them.

Q. 74. But this is what would be understood in the trade to be of a similar type of Lombard governor to those on the plants up there, or is that not so, or as to the parts thereof shown in this Exhibit W?

A. I think so.

Mr. Blakeslee: You may cross-examine.

Mr. Westall: The cross-examination will be waived.

C. A. HEINZE, a witness subpoenaed on behalf of Complainant, and being first duly sworn, deposed as follows in answer to interrogatories put by Mr. Blakeslee.

DIRECT EXAMINATION

By Mr. Blakeslee:

Q. 1. Please state your name, age, residence and occupation.

A. My name is C. A. Heinze; age, 30; occupation, electrical engineer; residence, Los Angeles, California.

Q. 2. With what interests are you at present associated or employed?

A. The city of Los Angeles.

Q. 3. Have you had anything to do with the installation or management of any of the electrical features of the Los Angeles aqueduct?

A. I was on construction work and operation work on the Los Angeles aqueduct, both in an auxiliary and direct charge of operating work.

Q. 4. For what period of time?

A. In the neighborhood of two years.

Q. 5. What years? The last two years?

A. No; the latter part of 1907 to the latter part of 1909.

Q. 6. Over what portions of the Los Angeles aqueduct did your service extend during these years?

A. The Owens Valley.

Q. 7. And at what places in particular?

A. Cottonwood and the Division Creek power plants.

Q. 8. These are located where?

A. Inyo County, California.

Q. 9. I hand you a map, being complainant's exhibit Q, and ask you ^{if you know} what that map shows.

Mr. Westall: Counsel for the defendant objects to the question as incompetent, irrelevant and immaterial,

and calling for not the best evidence, there being no showing that the map introduced is accurate or correctly represents what it purports to set forth.

A. It represents in a general way the county traversed by the Los Angeles aqueduct.

Q. 10. By Mr. Blakeslee: Do you find noted or located thereon the plants to which you have just referred, and, if so, please state how they are indicated.

A. The approximate location of the plants, as I have named, is given. They are marked "Division Creek Plant" and "Cottonwood Plants."

Q. 11. What is the nature of these plants?

A. Hydro-electric plants.

Q. 12. By what means is the flow of water to the wheels controlled in these plants?

A. By governor.

Q. 13. And this governor is of what general type, as to any essential part thereof?

A. To which governor do you refer?

Q. 14. The governor in either of these plants.

Mr. Westall: I object to the question as vague and indefinite, not specifying what counsel considers the essential parts thereof.

Q. 15. I will withdraw the question and put it as follows: Please describe briefly the nature of either of these governors.

A. That is, just the governor itself?

Q. 16. I am replying to the language that you used.

A. The governor at the Cottonwood power plant is what is known as the oil pressure type governor, self-contained, of the vertical type.

Q. 17. And as the Division Creek plant?

A. The Division Creek plant is what is known as the hydraulic type, and differs from the Cottonwood type in some particulars, the main one of which is that it uses water instead of oil, and that it is the horizontal type instead of the vertical, and is not of such a self-contained nature.

Q. 18. In what manner or through what general leading features of installation does this governor control the flow of water to the wheel in each plant?

A. To which plant do you refer?

Q. 19. Each plant.

A. It controls the water by means of a needle nozzle the gates of Division Creek plant. The gates at Cottonwood, the No. 1 unit, it controls by deflecting nozzle, and the No. 2 unit is controlled by a needle nozzle.

Q. 20. ~~It is~~ It is a single needle nozzle in each instance?

A. Not in every case.

Q. 21. How many nozzles are there in some cases?

A. In some cases there are two nozzles.

Q. 22. How many needles are there where there are two nozzles?

A. There are two needles.

Q. 23. How do these operate?

A. One connected directly to the governor and the other indirectly to the hydraulic cylinder connection.

Q. 24. Do both of these nozzles direct water upon the wheel?

A. No; only the main nozzle.

Q. 25. And how is the other nozzle used?

A. Used as an auxiliary nozzle.

Q. 26. And for what purpose?

A. This auxiliary nozzle is used to prevent excessive pressure accumulating in the pipe line due to a sudden closing of the main needle. In other words, to act to protect the pipe line.

Q. 27. How do these needles in the respective nozzles of each installation operate relatively?

A. The main nozzle operates to vary the water in proportion to the load changes. When these changes are gradual, they have no effect upon the auxiliary nozzle, which operates only in case the main nozzle attempts to close faster than a certain pre-determined rate, when it opens to relieve the pipe line.

Q. 28. What causes the closing of the auxiliary nozzle through its needle?

A. Springs.

Q. 29. And this closing takes place when?

A. After the needle is open.

Q. 30. And when with relation to the governing action of the main needle and nozzle?

A. It has no connection with the main needle and nozzle. It operates just as fast as the hydraulic cylinder which control it allows it to operate.

Q. 31. And after it has been opened during the closing action of the main nozzle needle?

A. Do I understand you to ask if it closes after the main needle has closed?

Q. 32. Does it close after it has opened in conjunction with the closing or closing movement of the main needle?

A. Its closing is governed entirely by the action of

the hydraulic cylinder upon the spring, and closes at a certain pre-determined rate, according to the way in which the hydraulic cylinder is set. After the nozzle is once open it is entirely separate and distinct from the main nozzle and closes on account of its own mechanism.

Q. 33. What I understand from your previous testimony is, the auxiliary needle opens conjointly with the closing of the main needle. Is that correct?

A. Only on rare occasions.

Q. 34. But that is true whenever it opens, is it not?

A. Yes, sir; through the hydraulic cylinder.

Q. 35. And that cylinder or the part playing therein causes the opening of the auxiliary needle under and responsive to the governing action of the main needle, does it not?

Mr. Westall: Counsel for defendant objects to the question as leading.

A. Indirectly; yes.

Q. 36. By Mr. Blakeslee: Please state how this cylinder acts to open the auxiliary needle or move it from closed position in the closing action of the main needle.

A. The hydraulic cylinder is a cylinder, as its name implies, and has a piston in it which, in turn, has a check-valve in it of a certain size to allow a free movement in one direction but in the opposite direction it has to force the oil which the cylinder contains through a small orifice. It has a certain pre-determined rate of outflow, and whenever the pressure exerted upon the piston is such as to cause it to move faster, the oil can be discharged through this orifice which causes it to move the auxiliary nozzle.

Q. 37. And what is taking place at this time with respect to the main needle?

A. The main needle is closing faster than a certain pre-determined rate.

Q. 38. And when this auxiliary needle opens what effect does it have on the velocity of water passing the main needle?

A. In what way do you mean, have an effect upon the velocity at the main needle?

Q. 39. Please read the question. (The Examiner reads the question.) Did you understand the question?

A. I don't know as I understand exactly what you mean.

Q. 40. I will re-state it. When the auxiliary needle is moved away from closed position, as you have testified, what effect does that operation of the auxiliary needle have upon the velocity of water passing the main needle?

A. That is, considering after the main needle is open?

Q. 41. If it is not I don't suppose any water can pass it.

A. The opening would tend to decrease the pressure at the main nozzle.

Q. 42. And how as to the velocity resultantly?

Mr. Westall: Counsel for defendant objects to this line of questioning on the ground that, so far as the record here discloses, this witness has not been qualified as an expert to testify as to the internal operation of these devices.

A. I should think that the velocity would be increased momentarily.

Q. 43. By Mr. Blakeslee: For what reason?

Mr. Westall: That is objected to as being matter of mere speculation on the part of the witness, and purely a matter of opinion for which he has not been properly qualified in this record.

A. I am not able to state.

Q. 44. By Mr. Blakeslee: Have you noted the operation of these nozzles and needles at the Cottonwood and Division Creek power plants?

A. I have.

Q. 45. How recently?

A. Not since 1909.

Q. 46. And at that time did your attendance at the plants come within the province of your duties on behalf of the city of Los Angeles?

A. It did.

Q. 47. Now, when the auxiliary needle leaves its seat or tends to open the auxiliary nozzle, what is the effect with respect to the volume of the flow of water through the auxiliary nozzle?

Mr. Westall: To which question counsel for the defendant renews his objection on the ground that the witness has not been properly qualified. The question is further objected to as calling for matter purely speculative.

A. Am I to understand that you want the volume of water when the needle leaves its seat?

Q. 48. By Mr. Blakeslee: Yes. What is the effect on the water passing the nozzle as it goes away from the seat.

A. It increases. The flow increases.

Q. 49. Where does such flow come from?

A. It comes from the main pen stock.

Q. 50. Where does the flow passing the main needle come from?

A. The penstock.

Q. 51. Now, I will ask you again to state what would be the effect upon the velocity of the water passing the main needle when the auxiliary needle moves away from its seat?

Mr. Westall: Counsel for the defendant renews his objection heretofore noted as to the immediately preceding question.

A. The velocity tends to increase.

Q. 52. By Mr. Blakeslee: And is that due in any way to the subtraction of water from the total amount in the main pen stock resulting from the passage of part of that water through the auxiliary nozzle?

Mr. Westall: The same objection.

A. Indirectly; yes, sir.

Q. 53. By Mr. Blakeslee: Supposing the auxiliary needle remained closed. What would be the effect upon the amount of water passing the main needle, with relation to the amount passing the main needle with the auxiliary needle unseated or in open position?

Mr. Westall: The objection heretofore noted is repeated, and it is further objected to as vague and indefinite.

A. I don't get a clear conception of the question.

Q. 54. By Mr. Blakeslee: I cannot put it any clearer. You can have it read as much as you want.

A. All right; read it again. (The Examiner reads the question.)

Q. 55. By Mr. Blakeslee: Take your time. I do

not want to hurry you at all. I do not want to hurry you or to confuse you. (The Examiner again reads the question.)

Mr. Westall: Counsel for defendant suggests and calls attention to the fact that the question has been read three times, and that it is vague and indefinite, and suggests that counsel put his question in some form that will be intelligible.

Mr. Blakeslee: We do not care for any suggestions from counsel; and if he is not able to understand the question, that is his loss. We are asking this question to be answered and the question is perfectly intelligible.

A. May I ask for information?

Q. 56. By Mr. Blakeslee: Yes, sir.

A. Do I understand the conditions are that the auxiliary nozzle is closed, and that you want to know what the condition will be in case the main nozzle is open as compared with its condition when the auxiliary nozzle can help it out during its movement?

Q. 57. Being open, yes. As compared with the condition when the auxiliary nozzle is open and the main nozzle is open.

A. Do you want a statement from me as to the condition of the velocity of the water in the pipe line?

Q. 58. The amount of water flowing.

Mr. Westall: The same objection to the explanation of the question is repeated as to the main question.

A. In the case of a nozzle without an auxiliary attachment on it, if the nozzle was closed the amount of water, of course, would be on the decrease. In case of the nozzle with the auxiliary attachment, if the main needle was closed and the auxiliary nozzle open, the

amount of water would be slightly on the increase momentarily and would gradually drop back to a point below which the main needle had opened previously.

Q. 59. By Mr. Blakeslee: Now, let us assume that the main needle is part way open and that the auxiliary needle is closed. Consider this as the first proposition. Let us further assume that the main needle is partly open and the auxiliary needle is open. Consider that as the second proposition. Now, would or would there not under these propositions be a variation of the velocity of water passing the main needle, assuming that the same head in the pen stock is maintained.

Mr. Westall: The same objection as was made to the previous question is here repeated, namely, that this witness has not been properly qualified as an expert and that the evidence called for is purely speculative.

A. As I understand, you have one case where the main nozzle is open and the auxiliary nozzle is closed. The second case is with both nozzles part way open. And you want to know the velocities—

Q. 60. By Mr. Blakeslee: The relative velocities.

A. Considering the main needle in each case—

Mr. Westall: It is further objected to as incompetent, irrelevant and immaterial to any issue in this case.

A. Momentarily the velocity would be greater in the case of both nozzles being open.

Q. 61. By Mr. Blakeslee: Assume that the auxiliary nozzle with both nozzles open, subtracted 80% of the flow of water passing through the main nozzle normally. Would the velocity at the main nozzle be greater or less with such 80% subtracted?

Mr. Westall: Counsel for defendant repeats the objection heretofore noted.

A. I don't know.

Q. 62. By Mr. Blakeslee: Would there be a difference in velocity?

Mr. Westall: The same objection.

A. I don't know.

Q. 63. By Mr. Blakeslee: You were present during the examination of Mr. Scattergood as a witness in this case this afternoon, were you not?

A. I was.

Q. 64. You heard his testimony given concerning the operations of these auxiliary and main nozzles, did you not?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. Partially.

Q. 65. By Mr. Blakeslee: Do you disagree with Mr. Scattergood as to any part of his testimony in this connection?

Mr. Westall: Counsel for the defendant objects to the question. The witness has stated that he only heard partially or followed partially the testimony of Mr. Scattergood.

A. The parts of Mr. Scattergood's statements that I heard and remember at this time, I do not object to.

Q. 66. By Mr. Blakeslee: Have you had experience and education as a hydraulic engineer?

A. I have not. I have not had the education or training that would tend to qualify me as an expert on hydraulic matters. However, I have had the education such as would give a person a primary knowledge of

hydraulics and have had practical experience in operating hydraulic works.

Q. 67. Have you ever taken any course in hydraulic and education as a hydraulic engineer? *engineering*

A. Not solely hydraulic engineering, but such as would be given with a person taking courses in engineering with some other branch as the primary object.

Mr. Westall: Counsel for the defendant at this stage, upon the last answer, moves to strike out all matters of opinion which have been heretofore expressed by the witness in answer to questions put to him by counsel, as showing clearly that this witness is not qualified to give the testimony which has been sought to be elicited.

Mr. Blakeslee: We consent to the striking out of all the testimony from the present witness amounting to mere statements of opinion pertaining to the action of the main and auxiliary nozzles and needles in the two plants under consideration, as moved by the defendant.

Q. 68. Have you any desire to depart from your previous testimony to the effect that each of the plants under consideration has a main nozzle and needle and an auxiliary nozzle and needle, and a governor controlling the main needle and connections through the returning device between the governor and the auxiliary needles?

Mr. Westall: Counsel for the defendant objects to the question as assuming matters not testified to by the witness, the testimony of record speaking for itself. Also for a further reason that it amounts to cross-examination of the plaintiff's own witness.

A. My previous answers in this regard will stand, only as regards the main nozzle. I stated in my previous testimony that the connection between the main nozzle

and its auxiliary nozzle was not direct but indirect through the hydraulic cylinder.

Q. 69. By Mr. Blakeslee: Aside from that distinction are you or are you not willing that your testimony stand as given, apart from matters purely of opinion?

Mr. Westall: I object to the question. The witness has no discretion as to whether or not the testimony he has given shall stand, and his willingness nor unwillingness that the record heretofore made shall stand is not a matter pertinent to any of the issues in this case.

Mr. Blakeslee: I assume that counsel for the defendant is familiar with that rule of evidence which permits a witness at any time during an examination to correct any statement which he has made, and with that rule of evidence in mind I am merely attempting in all fairness to the witness to give him an opportunity to clarify the record, in order that his testimony shall be as much and no more than he wishes to swear to.

Q. 70. I now show you a photograph, being Complainant's Exhibit E, covering up the identifying wording thereon, and ask you if you recognize what it discloses. If so, please state.

A. Exhibit E is a picture of No. 2 unit at the Cottonwood power house.

Q. 71. I now show you Complainant's Exhibit H, with the identifying wording thereon obscured, and ask you if you recognize what is disclosed there, and, if so, to please state.

A. Exhibit H is an interior picture of Division Creek No. 2 power plant.

Q. 72. With similar obscuration, I show you Com-

plainant's Exhibit M, and ask you if you recognize what is disclosed therein, and, if so, to please state.

A. Exhibit M is an exterior photograph of Cottonwood power house and a portion of the Los Angeles aqueduct.

Mr. Westall: Counsel for the defendant objects to the piling up of testimony identifying the various photographs which have been offered in evidence.

Q. 73. By Mr. Blakeslee: I will show you Complainant's Exhibit N in the same way, and ask you similarly what it discloses.

A. Exhibit N is also an exterior picture of the Cottonwood power house.

Q. 74. Also, similarly, with respect to Complainant's Exhibit O.

A. Exhibit O is a picture of electric dredger No. 4, somewhere in the Owens Valley, Inyo County.

Q. 75. Do you know by what power this dredger was operated?

A. Electricity.

Q. 76. From what source was this electricity obtained?

A. From the city's hydro-electric plants.

Q. 77. Where?

A. In Inyo County.

Q. 78. By what name?

A. Cottonwood and Division Creek.

Q. 79. Similarly, with respect to Complainant's Exhibit P.

A. Exhibit P is an exterior photograph of the Division Creek No. 2 power plant.

Q. 80. Referring now to the matter over which we

had difficulty, as to the question of velocity of flow of water at the main nozzle past the main needle in the plants we have been talking about, I will put the question again to you in this way: In case No. 1 the main nozzle is open and the auxiliary nozzle is closed. In case No. 2 the main nozzle is open and the auxiliary nozzle is open. First, will there or will there not be a difference of velocity of water passing in the opening of the main nozzle, as between the two cases?

Mr. Westall: The same objection as heretofore noted is repeated to this question, and further, that the witness is not properly qualified as an expert.

A. With respect to the main nozzle in each case?

Q. 81. By Mr. Blakeslee: Yes, sir.

A. Yes.

Q. 82. Having determined that there is a difference, in which case, the first or the second, does the greater velocity exist at the main nozzle?

Mr. Westall: The same objection is repeated, to-wit, that the witness is not qualified to testify as an expert.

A. In the case where only one nozzle is open the velocity of the main nozzle is the greatest.

Q. 83. By Mr. Blakeslee: Being which case by number?

A. Case number one.

Mr. Blakeslee: You may inquire:

Mr. Westall: No cross-examination.

January 17, 1914, A. M.

GEORGE J. HENRY, Jr., recalled as a witness on his own behalf, resumed the giving of his testimony in chief as follows:

DIRECT EXAMINATION (Resumed)

By Mr. Blakeslee:

Q. 117. Can you produce any further showing on paper illustrative of the construction and mode of operation of Complainant's Exhibit W, being the Lombard Governor Device?

Mr. Westall: Counsel for the defendant objects to the question as incompetent, irrelevant and immaterial.

A. I have had prepared in my drafting room and under my direction two blue prints which I now hand you, illustrative of the form of governor known as the Lombard, with and without the clutch mechanism operated from the controller for the purpose of preventing the governor from "over-running", and I have marked these blue prints, the first thereof, Z. The first, which I have marked Z, shows the elements of the governor without the controller-operated clutch, and the second, I have marked ZZ, which shows diagrammatically the same governor elements with the addition of the automatically-controlled clutch for preventing the governor from "over-running".

(The witness produces two blue prints and marks the same as testified.)

Q. 118. By Mr. Blakeslee: Are there any features shown in these blue prints in addition to the features embodied in Complainant's Exhibit W, being the Lombard Governor Device?

A. Yes. There are the other principal parts or elements of the governor that go to make up the governor, all being shown diagrammatically for the purpose of illustration and exposition.

Q. 119. I will ask you to indicate upon these blue prints by corresponding reference letters such corresponding features as you find in any of the photographs, being Exhibits E to P inclusive, in which you have testified the Lombard governor device, in counterpart with Complainant's Exhibit W, is shown, and please follow this by making such further statement as you desire relative to the operation of this governor device and the results of such operation.

Mr. Westall: Counsel for the defendant objects to the question as incompetent, irrelevant and immaterial.

A. The two Lombard governors, which I have previously testified were installed in the Cottonwood plant, are what is known as the vertical type, containing an operating-oil pump or system for shifting the power means, and the governor at the Division Creek No. 2 plant is what is known as the horizontal type using water pressure from the main pipe line or penstock for the purpose of providing the operating means with a power medium. ~~Both types of governor, vertical with a power medium.~~ Both types of governor, vertical and horizontal, although of different power capacity and outward appearance, retain the same elements in operative combination in the same operative combination for controlling the gate and by-pass. On comparing blue print Z with photographs Exhibits E, G, H, J and K, I have marked on said blue print Z letters corresponding with letters indicating similar parts, first on photo E, following each letter with a letter the same as the photograph exhibit. For example, fly ball element G on photo Exhibit E, is marked G-E on blue print Z. L-E, and K-E,

are operative connections of the returning device; D-E is a rock shaft actuated by the governor power means for shifting the water gates; H-E, the driving pulley from the wheel shaft, so that fly balls G-E will be sensitive to speed changes of said shaft.

Referring now to Exhibit G, I add the following lettering to blue print Z, indicating the same parts thereon with the same letters, and following such letters with the letter G, indicating that they are taken from photo Exhibit G: W-G is the power means set into operation from the controller valve Y-G; pump Z supplies pressure to the pipe which I have marked Z-E; the element shown in photo Exhibit E as M and in photo Exhibit G as M, is not present in the governor shown in blue print Z, as this is an automatic clutch-controlled valve, whereas in blue print Z the oil passage about the governor dashpot, which I have marked return dashpot, has no automatic means of adjustment to prevent "over-running" of the governor.

"Referring now to photo Exhibit H, similar elements are indicated by similar letters. Fly balls, sensitive to speed change, appear as CC-H; operating pulley, DD-H; controller valve, EE-H; operating cylinder, FF-H; rack and quadrant, GG-H; rock shaft, HH-H.

Referring now to photograph Exhibit J, returning rack and pinion, UU-J; returning connections, XX-J. There is not present, however, in blue print Z the automatically controlled by-pass valve actuated by the clutch under the control of the controller as indicated in photograph J with the letters YY and ZZ. The same applies to photo Exhibit K. The elements thereon

shown as YY and ZZ, automatically controlling the rate of returning from the controller to prevent the governor "overrunning" not being present in the blue print Z.

Referring now to the blue print ZZ, I have marked thereon all of the elements appearing on blue print Z and exactly the same as thereon appearing, with the exception of the following: Returning dashpot I have marked "Automatically controlled returning dashpot," such automatic control being accomplished through the needle valve which I have marked YY and which is moved by the clutch ZZ, exactly the same as accomplished in Lombard governor part Exhibit W now in the case. The automatic action that takes place and which prevents the governor "over-running" is, in blue print ZZ, that upon shifting of the controller by the speed-sensitive means which admits pressure fluid to and from the operating cylinder, I have marked "controller"; I have marked the operating cylinder "operating cylinder"; the connections L-E and K-E actuate with positive motion the piston in the returning dashpot, shifting thereby the rack and rotating the pinion shown at UU-J, and causing a movement of the clutch bar on one or the other of the sloping jaws of the stationary clutch element ZZ, thus causing, whenever the returning dashpot has been displaced from its normal position, the pinion, UU-J, to rotate, to shift the screw threads on the valve stem, so marked, an automatic opening of valve YY; the degree of opening being greater or less as the returning movement of connections L-E is greater or less, which, in turn, is greater or less, depending on the degree of movement of the controller, because the greater the

movement of the clutch bar on the sloping side of ZZ, the more is the valve YY displaced from its ~~support~~. Consequently, upon great movements of the controller valve, we have preportionally greater movements of the clutch ZZ and its associated clutch bar, opening of YY, permitting the governor valve stem, actuated through the rack and pinion UU-J, to return, shifting the screw threads on the valve stem in a direction to return the controller to its zero or normal position. The rate of the return of this controller to its zero or normal position is thus automatically effected through the setting into operation of this clutch ZZ and its associated clutch bar from the first movement of the controller; and such rate of return of the controller to its zero or normal position is gradually retarded automatically as the clutch bar slides down the side of the clutch ZZ, gradually and automatically closing the valve YY. It will thus be evident that the governor will upon great load changes, and consequent great demand for shifting of water gates, act quickly to make such gate movement, and that during the period when the speed is returning to its correct number of revolutions, said returning movement of the governor will take place rapidly during the first part of the change and at a slower and slower rate as the valve YY approaches its seat. And when it has closed the port, thus locking the by-pass for the oil, the governor ceases further returning movement before it has "over-run." On very slight movements of governor action by very slight changes in the speed, calling for slight movements of the water gates, valve YY is not set into motion, or if so, only to an extremely slight degree. Its

value consists in being able to meet sudden or severe changes of load, and bring the speed back without "over-running" with a great degree of accuracy and rapidity. In practice, water wheel governors are in movement and are causing the movement of water gates at substantially all the time during the operation of the water wheel. Such controlling of the water gates is what might be called a continuous process by the governor. But there are periods in practice on an ordinary plant—probably every 10 minutes would not be an exaggeration—at which the automatic clutch ZZ with its clutch bar and automatically moved valve YY from the shifting of the controller and for the purpose of returning the controller to its normal or zero position, take place. In practice before the introduction of the automatic means, it was customary, as was familiar to most of us who have attempted to use incandescent lights in our homes before the year 1901 or 1902, and, possibly, a year later in this territory, that the incandescent lights would a number of times in an evening show a decided increase or decrease in the illumination; they would burn high or low for a period of a number of seconds or minutes, thus greatly inconveniencing users. The introduction of this automatic returning feature on the governor of hydro-electric plants has eliminated these periods of departure from good illumination, and have, of course, affected an equivalent improvement to the service in other electric devices. The device of the Lombard governor, and which is in the case as Exhibit W, contains this automatically controlled portion as just indicated and described on blue print ZZ.

Mr. Blakeslee: The blue prints just produced and discussed and marked by the witness are offered in evidence as Complainant's Exhibit Z, blue print of Lombard Governor Device without control-operated clutch, and Complainant's Exhibit ZZ, blue print of Lombard Governor Device with control-operated clutch.

Mr. Westall: Counsel for defendant objects to the introduction of the blue prints referred to as incompetent, irrelevant and immaterial, and as not fully shown to be authentic.

~~That~~^E said blue prints so offered in evidence are respectively marked by the Examiner as "Complainant's ~~Exhibit Z, blue print of Lombard Governor Device without~~^{Exhibit Z, blue print of Lombard Governor Device without} control-operated clutch," and "Complainant's Exhibit ZZ, blue print of Lombard Governor Device with control-operated clutch."

Q. 120. By Mr. Blakeslee: Can you state how these blue prints were produced?

A. Yes. As stated before, they were produced under my direction in my drafting room from years of familiarity with the particular device and governor that they represent. I have designed and built probably 200 water wheel governors.

Q. 121. In your previous testimony you have referred to the making of certain sketches upon January 2nd of this year at the Cottonwood and Division Creek power plants, prior to the execution of Exhibits U and V, being line drawings of nozzles, etc. Can you produce any such sketches at this time?

A. I can and do. My testimony was that these line drawings were produced from sketches and photographs. The photographs I have already produced, and I herewith produce these sketches.

Q. 122. And the photographs referred to are those in evidence as Complainant's Exhibits E to P inclusive?

A. Yes sir.

Mr. Blakeslee: These sketches just produced by the witness, with the letterings thereon, and the Pullman Company's passenger checks attached thereto, all mounted upon two separate sheets of paper, are offered in evidence as Complainant's Exhibit UU and VV.

Mr. Westall: Counsel for the defendant objects to the offered sketches and the passenger checks as incompetent, irrelevant and immaterial, and especially objects to the passenger checks attached thereto, on the ground that there has been no proper foundation laid for their introduction in evidence.

The examiner thereupon marks the said two exhibits so offered as Complainant's Exhibits UU and VV respectively.

Q. 123. By Mr. Blakeslee: What does the sketch Exhibit UU depict or show?

A. It shows the arrangement of the governor parts and water gate, or needle nozzle and by-pass and by-pass valves, or, as it has been called, auxiliary nozzle, and which I have further shown on a large line drawing now in the case as Exhibit U, and which referred to the Cottonwood plant of the Los Angeles aqueduct about which I have previously testified.

Q. 124. In so far, am I to understand, as these parts are part of the installation testified about, is that correct?

A. Yes sir; they are sketches of those parts mentioned in my answer, being a part of the entire governor apparatus. The balance is shown in the photographs E

and G, which were more accessible to photographic work, being above the floor, and these parts shown on the sketch being below the floor and difficult to photograph; photo Exhibit F being, however, a photograph indicating them as far as it was possible to obtain by photographic means.

Q. 125. Now, please similarly state what is indicated in the sketch attached to the sheet marked VV?

A. This sketch which you have handed me illustrates analogous parts, that is, the water gate and nozzle and auxiliary nozzle or by-pass, and their valves and connections, at the Division Creek plant number 2, which parts are more clearly shown in photos H to L inclusive.

Q. 126. You were present, were you not, yesterday afternoon during the taking of the deposition in this case of Mr. E. F. Scattergood?

A. Yes sir.

Q. 127. In his testimony he made reference to a certain part shown in Complainant's Exhibit I and marked NN, referring to the same as a bell crank. From your knowledge of mechanical nomenclature is this the best term to apply to the part in describing it?

A. I would scarcely so consider it. A bell crank, in mechanics, usually refers to a double lever having its two members at right angles to each other, and pivoted at their joinder, whereas the part NN on this photograph is a double lever with the two elements in line with each other, and pivoted at the center, causing an opening of the by-pass element as the water gate closes, and vice versa.

Q. 128. Mr. Scattergood also referred to a shaft as

extending toward the governor and as connected with the lever K. I note there is a part II extending from this lever. What would you term this part?

Mr. Westall: Objected to on the ground that it is incompetent, irrelevant and immaterial.

A. It is probable that Mr. Scattergood has not had occasion to describe the various governor elements in a hydro-electric installation with sufficient frequency to have become familiar with the terse engineering language of the present day, as many of his terms were a little old fashioned. I have endeavored throughout my testimony to give the old fashioned term as well as the modern term where there seemed a possibility of any confusion or an opportunity to make the record clearer. For example, I used the term "penstock" or pipe line. The word "penstock" is quite an old fashioned term and is not and should not be used as describing a pipe line of the present day where the pipe is long and steep. It is a term applied to the practice in the days of short, large-diameter pipe lines, used for turbine water wheels. I have also used the words "water gate" or "needle" or "needle nozzle" as being synonymous.

Mr. Westall: Counsel for the defendant moves that all that part of the answer beginning with "It is probable that Mr. Scattergood" be stricken out as not responsive to the question.

Q. 129. By Mr. Blakeslee: I further notice that Mr. Scattergood referred to the end of the shaft LL as being received in a socket. Is that the term mechanical engineers customarily apply to the part referred to by Mr. Scattergood?

Mr. Westall: Objected to on the ground that it is incompetent, irrelevant and immaterial.

A. No sir; the end of the shaft LL in photograph Complainant's Exhibit I is carried in a bearing or pillow block.

Q. 130. By Mr. Blakeslee: Similarly I notice that Mr. Scattergood in his deposition objected to some of the terms you have applied to the parts of the governor under discussion, such as the terms "water gate", "valve", etc., as applied to needles of the nozzles, and the needles acting in conjunction with the nozzles. Have you any explanation as to the discrepancies in the choice of terminology made by Mr. Scattergood and that which you have made in your testimony?

Mr. Westall: Counsel for the defendant objects to the question on the ground that it is irrelevant, immaterial and incompetent.

A. I believe there is no difference between Mr. Scattergood's testimony and mine except in the use of terms. By using the words "water gate" in Exhibits U and V I meant exactly the same as Mr. Scattergood does in his testimony. He is correct in saying that the particular type of water gate herein illustrated is what is known as a needle, and, when, in combination with its stem, it forms a needle valve, the nozzle part in which this works and having the opening within which the needle is actuated, forming a water gate. The same is true of the several elements that are shown as "by-pass and "by-pass valve" and its associated operating stem. This particular type of water gate consisting of a needle, its needle stem, and the nozzle, pipe within which it actu-

ates, is one that has come into extensive use in recent years.

Q. 131. By Mr. Blakeslee: When you say that you believe there is no difference between your testimony and Mr. Scattergood's, I take it that you are referring to the nature of the parts as to which there is a diversity between the terms used by him and those used by yourself. Is that correct?

A. Yes sir; the parts mentioned in my last answer.

Q. 132. Do you think that the fact that Mr. Scattergood is more pre-eminently occupied as an electrical engineer has any bearing on the choice of his mechanical terms?

Mr. Westall: Objected to on the ground that it is incompetent, irrelevant and immaterial.

A. Yes sir; I do.

Q. 133. By Mr. Blakeslee: Mr. Scattergood and Mr. Heinze have identified Complainant's Exhibit O as being a dredge which has been operated by electrical energy from the Cottonwood and Division Creek power plants, about which you have testified, one or the other or both thereof. Will you please state what effect the load factor involving the operation of such a dredger would have upon water wheel control in a plant such as the Cottonwood plant or Division Creek number 2 plant?

Mr. Westall: Counsel for the defendant objects to the summarization by counsel of the testimony of Mr. Heinze and Mr. Scattergood as to what the photograph in question shows, and also objects to the remainder of the question, as incompetent, irrelevant and immaterial.

A. A load factor of an electric system supplied from

the two hydro-electric plants in question and serving electricity for one or several dredges as indicated in photo Exhibit O, would vary very greatly from time to time. A curve indicating the load during the day would have many "saw-teeth" or peaks and depressions therein, such peaks being an indication of a demand for greater electric power, and the depressions an indication of a reduction of demand for electric power by the apparatus being served. These peaks and depressions in supply and demand are all reflected in governor movements and water gate and by-pass movements in the plants supplying the power. In practice there are two or more plants supplying current to one line, from which line various pieces of apparatus, as motors and lights, are supplied their requisite energy. If a dredge, as illustrated in photo Exhibit O, is operating, there are several motors thereon supplying the power required by the different parts, and a motor of very considerable power—that is, one whose power requirement is a large percentage of the total power supplied from the plants,—for the purpose of operating the shovel, bucket or scoop shown in the immediate foreground in the photograph. Whenever the shovel is plunged into the earth or material to be removed, it throws instantaneously upon its motor a very heavy load, which load must at once be supplied from the generating station and, therefore, the water wheels, and there must be a corresponding movement of the water gates to supply water from the pipe line to the water wheel. The variations occasioned by dredger service are extremely great, being one of the most severe forms of service met with in hydro-electric

transmission service. A recording apparatus indicating gate movement by the governor would, upon such dredging operations being performed, show a very great demand for power and corresponding gate movement on the shovel entering the dirt to be removed; and a sharp depression in the curve showing the power rejected upon the bucket being raised and emptied. It is obvious that the water gates while in operation almost continuously for small variations in power required by the remaining general service of motors and lights, would at times of great load demands and rejections, as in the case of the shovel being operated in the dredge, show a very considerable or unusual movement. It is at such times as this that the movement of the by-pass becomes effective to prevent dangerous ⁱⁿertia effects in the pipe line,—dangerous both to the safety of the line and the accuracy of governor control. If such accurate governor control is not maintained over periods of these peaks and depressions in the load curve, adequate service would not be performed by those motors and apparatus and lights being supplied from the same system. For example, a centrifugal pump being driven 50 miles away might lose its load entirely unless the speed were kept up by the governor.

Q. 134. By Mr. Blakeslee: Mr. Scattergood testified with relation to a certain breakage or rupture which had taken place in the penstock or supply line pipe of either the Cottonwood plant or Division Creek plant number 2 under discussion. Did you hear his testimony as to this?

A. I did hear him so testify.

Q. 135. What have you to say with respect to the relation of the governor of such part to such rupture or breakage, within your knowledge of the installation of such plants, as testified to by you, your knowledge of the operation thereof, and your general knowledge as to the inertia effects in such pipe lines.

A. Such pipe rupture and resulting expensive damage and interruption of service as Mr. Scattergood testified to, is to be expected whenever a governor is permitted to shift the water gate rapidly in a closing direction, unless the by-pass is opened sufficiently to prevent such water ram. The case of breakage he speaks of, beyond all doubt, was occasioned by the by-pass not being opened in this one instance when the governor moved the water gate or needle in a closing direction. The proof that it must have been as I so indicate lies in the fact that numerous short circuits and heavy demands for power were made for a number of years and are at times made now on these plants, and the governor does now frequently move the gate in a closing direction with rapidity and to a large degree, and the auxiliary nozzle or by-pass with its needle valve is operated in an inverse direction by the governor to prevent such breakage. By referring to Exhibits U and V it will be seen that there are adjusting screws for adjusting the rate of return to normal of the by-pass, and these are indicated on said Exhibits U and V by the words "adjusting screws" shown on the oil dashpot in the lower portion of the drawing. The operators in charge of the plant, if careless, might readily leave the adjusting screws on said oil dashpot or hydraulic cylinder, as

mentioned by Mr. Scattergood, too far open, thus preventing the by-pass valve from opening with sufficient rapidity as the main water gate was moved in the closing direction by the governor. A water ram in the pipe line would therefore occur at this time of inoperative by-pass movement, which would in all probability seriously damage or rupture the main supply pipe, causing in some cases many thousands of dollars of expense. There could not be a better demonstration of the necessity of by-passing water on the movement of the water gate for the purpose of preventing inertia effects, than the lesson of the broken pipe in the present instance.

Mr. Westall: Counsel for the defendant moves to strike out the answer as not responsive to the question. Counsel for the defendant also objects to this method of rebutting the effect of the evidence given by the plaintiff's own witness, Mr. Scattergood.

Mr. Blakeslee: Careful attention to the testimony of the present witness relative to that of the witness Scattergood and witness Heinze will make it clear that the present testimony of the witness merely produces a corroboration, or, we will say, merely tends to corroborate the testimony heretofore given in this case; and if there is any possible contradictory result obtained, the evidence will speak for itself and the weight of the evidence must decide the points involved, by preponderance.

Mr. Westall: Counsel for the defendant suggests that the foregoing examination of the witness would make it appear that the complainant is seeking to take advantage of the testimony given by its witnesses, Mr.

Scattergood and Mr. Heinze, in his favor, and seeking to disclaim and exclude all evidence, which, in his opinion, is not favorable to the complainant.

Mr. Blakeslee: This is not a time for arguing this case, and we object to the attempts of counsel for the defendant to argue the case upon the record, and to incumbering the case in that way. A great many of the objections of counsel for the defendant verge upon such argumentative quality, and, if the same are persisted in, we shall have to move that the cost of reporting, transcribing and returning the record, be taxed proportionately against the defendant.

Q. 136. Please point out again on Exhibits U and V the means of adjustment which you have referred to in your last previous answer for varying the sensitiveness or responsiveness of the by-pass.

Mr. Westall: Counsel for the defendant objects to the question as having been already fully covered by the witness in his previous examination, and as being a mere repetition.

A. The adjusting screws are labeled "adjusting screws" and are shown on the part marked "oil dashpot" on both of these exhibits.

Q. 137. By Mr. Blakeslee: Please define a little more in detail what this adjustment causes?

A. The movement of these adjusting screws which are set from time to time to correspond with the rate of the governor movement, as limited by other governor adjustments, is for the purpose of varying the area of the port through which the oil passes from one side of the dashpot cylinder to the other, around the piston, so

as to permit the dashpot to return the by-pass valve to its normal position with a greater or less degree of rapidity. And it is obvious that if they be adjusted for a wider open port the by-pass valve will return at a greater rate; and if the port be adjusted by them to a smaller area, the by-pass valve will return at a slower rate. Most accurate governing is attained where this rate is slower than a rapid movement of the governor.

Q. 138. Referring now to the Lyndon patent in suit, marked for identification, and to Complainant's Exhibit D, please a little more fully point out the sequence of energization of the electro magnets 15 or 16, as a first group, and 32 as a second group, and 64 as a third group. Also, in the same ^{answer} ~~manner~~, you may point out the sequence of de-energization involving these groups of electro magnets. Further, again state the results of such energizations and de-energizations.

Mr. Westall: Counsel for the defendant points out that this matter has already been very thoroughly covered in the prior examination of this witness and that this question merely calls for evidence upon a point that has already been thoroughly gone over and covered.

A. I now refer to figure 1 in the Lyndon patent in suit. Magnets 15 and 16 are energized through the action of the solenoid 33, one or the other of these magnets being energized for every governor movement. This is occasioned by an increase or decrease in the voltage of dynamo 8, actuated from the water wheel shaft, said voltage rising or falling at a rapid rate on an increase or decrease of speed. If the speed increase is but slight, the plunger 34 is pulled but a short distance into the

solenoid 33, causing contacts to be made at 40, 40a, and magnets 15 to be energized, said movement being sufficient to energize magnets 15, but not sufficient to cause contacts to be made at the end of the bar which is pivoted at 43a. The action of the governor will then be a rotation of the shaft 12 and the shifting of the turbine gate on the stem 21b to a slight degree. In such cases the inertia effects on the pipe line are but slight, and the speed of the wheel corrected before material departure from normal. If now, instead of a slight increase in the speed of the wheel due to a very small rejected load, we assume a case where the load rejected is greater, as, for example, when the dredger shovel is lifted and emptied, the speed of the water wheel increases at a quicker rate and establishes a greater voltage variation from dynamo 8, sensitive to the said speed, a heavier pull by the solenoid 33 on plunger 34, causing contacts to be made at 40 and 40a respectively as before; but said movement of plunger 34 being now greater than formerly, causes contacts to be made at 45a, 45, 46a and 46, causing the energization of magnets 32, and a movement of the returning mechanism through the clutch plate 23, 22; and contacts to be made between 100 and 103, and 101 and 104, and in energization of electro-magnets 64, and an opening movement of by-pass valve 48. Said returning mechanism and said by-pass movements actuated respectively from the energizations of magnets 32 and 64, proceeds until such time as the solenoid 33, energized from dynamo 8, permits the movement of the plunger in an outward direction to be made through the action of spring 38, which draws the plunger out as the

voltage reduces, contacts being broken and interrupting the work of the magnates 32 and 64 first, and finally the movement of the plunger 34 proceeding in an outward direction and the breakage of the contacts at 40, and interrupting the further action of the governor. The introduction of the movement of the clutch means 22, 23, during periods of considerable governor movement and its elimination when the speed has returned closely to normal, and the final remaining movement which breaks the contact at 40 and 40a, bringing the mechanism to rest at the moment that the speed has returned to normal, accomplishes most perfect governing. The reverse action takes place on a decrease of speed. That is, magnets 16 are energized only for only a slight reduction in speed, and magnates 32 and 64 remaining inoperative unless the voltage from the dynamo 8, actuating solenoid 33, drops to a sufficient degree to enable the contracts previously mentioned to be made for energizing magnets 32 and 64. It is obvious that by adjusting contacts 45a, 46a, 100 and 101, or their associated anvils, we may energize magnets 32 on a slighter or a greater movement of the solenoid plunger 34, anticipating or following with the energization of magnet 64, dependent on the requirements of each individual installation. For example, for a long pipe line, where the inertia effects on sudden velocity change are greater, we must set into operation earlier and more delicately adjust the returning of the by-pass valve 48; whereas, for a short pipe line we may remove contacts 100 and 101 further by adjustment from contacts 103 and 104, so that magnet 64 is not energized except for greater

speed changes, thus taking care of inertia effects only at such times as they become serious.

Q. 139. By Mr. Blakeslee: Please state separately what causes selective energization of electro-magnets 15 and 16.

A. Magnet 15 is energized when an over-speed occurs, and must be reduced by a closure to a greater or less degree of the water wheel gate. Magnet 16 is energized when a reduction in speed of the water wheel occurs, due to a greater demand of load, and its energization is for the purpose of bringing about movement in the governing mechanism to open to a greater or less degree the water wheel gate.

January 17, 1914, 2:00 P. M.

GEORGE J. HENRY, JR., recalled, resumed his testimony in chief as follows:

DIRECT EXAMINATION (Resumed)

By Mr. Blakeslee:

Q. 140. Please now compare the disclosure of the Lyndon patent in suit with the disclosures of Complainant's Exhibits E, F, G, H, I, J, K and L, supplemented by the disclosures of Complainant's Exhibits U and V, as merely assisting evidence, or evidence explanatory of such disclosures of Exhibits E to L, and with the disclosures of Complainant's Exhibits W and X, as merely assisting and explanatory evidence or disclosures, and likewise of Complainant's Exhibits Z and ZZ, to be utilized similarly as assisting disclosures or embodiments—and predicate such comparison upon construction, combination, inter-relation and operation of the

disclosures of the Lyndon patent in suit, on the one hand, and the disclosures of said enumerated exhibits, on the other hand.

A. I think I have in response to previous questions made clear the action that takes place in the several co-related elements in the Lyndon patent by reference to the drawings therein contained, and which description by me and the drawings of the patent show clearly, referring now to Exhibit A, the Lyndon patent in suit, a water wheel governor consisting of a combination with a water gate operating shaft, being 20 in figure 1, means for operating the same in either direction to govern the water wheel, being shaft 6, movement being transmitted through gears 9 or 10 to the gear 11 and shaft 12 through the action of the clutch movable in either direction by magnets 15 and 16, of a controller for said operating means, being solenoid 33, actuating plunger 34, and its connections, responsive to changes of speed of the water wheel, being the action of solenoid 33 on voltage variations from dynamo 8, a returning device for said controller provided with clutch connection to said operating shaft, being clutch plate 23 actuating 22, rod 25, springs 28 and 27 and 29 and their associated parts, and means actuated by said controller on movement thereof from normal position to engage said clutch with said shaft, being those parts actuated from solenoid plunger 34 and causing contacts to be made at 45a, 46a and 45 and 46, so as to cause the return of said controller to normal position and interrupt the governing action before it has over-run the proper amount, this being accomplished through the displacement of lever 26

actuated by springs 27, 28, rod 25, from clutch 22, 23, and I find the mechanical equivalent of said parts in photographic exhibits you have handed me and mentioned in your question, and descriptive drawings U and V, as existing completely in the apparatus as therein disclosed, and as in existence, and as I saw in operation on the unit number 2 at the Cottonwood plant and the unit in Division Creek plant number 2. By referring specifically to Exhibits E, F, and G, being of the apparatus in the Cottonwood plant, and Exhibit U, being a line drawing illustrating more clearly certain of the parts, the several parts being lettered in said exhibits as follows: A water wheel governor consisting of a combination with a water gate-operating shaft D; means for operating same in either direction to govern the water wheel, operating cylinder W; a controller for said operating means responsive to changes of speed of water wheel, this being the valve set in the governor casing at Y, which is responsive to the speed of the water wheel by movement imparted to it from the fly balls G, actuated from the pulley H by belting on the shaft I; a returning device for said controller provided with a clutch connection to said operating shaft,—I find these parts at L, K and M. The clutch portion of this device is also clearly shown in model Exhibit W. I find means, actuated by said controller on movement thereof from normal position to engage said clutch with said shaft so as to cause the return of the controller to normal position and interrupt the governing action before it has over-run the proper amount, in connections L and K.

Referring now to photographs Exhibits H, I, J, K, L and line drawing V, I find the same elements as follows: Water-gate-operating shaft L is indicated by LL; means for operating the same in either direction is shown in governor cylinder FF; the controller for said operating means is contained within the casing on top is shown at EE, this being responsive to changes of speed of the water wheel through its stem connection VV, with the fly balls CC actuated by pulley DD from the water wheel shaft TT; a return device for said controller I find at XX and UU, provided with a clutch connection to said operating shaft; I find said clutch at ZZ actuated through the connections XX, and means actuated by said controller on movement thereof from normal to engage said shaft I find in parts XX so as to cause the return of the controller to normal position and interrupt the governing action before it has over-run the proper amount, such functions being performed through the clutch ZZ automatically actuating the by-pass valve YY and the dashpot of the returning apparatus.

Referring now to claim 4 of the Lyndon patent and to the devices illustrating the apparatus at the Cottonwood plant, I find in photo Exhibit E, F, G and line drawing Exhibit U, a water wheel governor consisting of the combination with a water-gate-operating shaft, in either direction, indicated by D on said exhibits; a controller responsive to changes of speed of the water wheel has been pointed out as above and is indicated at Y; ~~on G, H, and I~~; fly balls G, pulley H, shaft I; a controlled reversing gear, being the cylinder F, operating piston in either direction, thus actuating the rock shaft D in

either direction, and a returning device for said controller connections K and L, acting upon the valve stem connection between the controller and the fly balls as exhibited in Exhibit ZZ; and provided with actuating means controlled by said controlling means to return the controller to inoperative position, as indicated by the valve shown in the above mentioned photo exhibits at M and as shown in the white metal clutch parts and brass needle thereof in exhibit W, and as shown in blue print Exhibit ZZ and marked ZZ, clutch bar and valve YY.

Referring now to the apparatus at the Division Creek number 2 plant, corresponding parts there exist in the same combination and perform the same function in substantially the same way as called for in the Lyndon patent, and as they do also at the Cottonwood plant apparatus, such parts being in exhibits H, I, J, K, L and Complainant's line drawing Exhibit V and blue print ZZ and Exhibit W. I find therein a water wheel governor consisting of the combination with a water-gate-operating shaft LL; a driving shaft HH; a reversing clutch gear, cylinder FF, operating in either direction; a controller responsive to speed changes of the water wheel as pointed out above, and which controller controls said reversing gear, and a returning device for such controller consisting of parts XX and UU, through the rotation of stem VV, provided with actuating means controlled by said controlling means; I find in clutch ZZ an automatically actuated valve YY, which parts return the controller to inoperative position so as to prevent excessive movement of the governor. These parts are

found in the drawing figure 1 of the Lyndon patent, being the same parts as testified to above and as covered by claim 3.

Referring now to claim 6 of the Lyndon patent in suit, and to figure 1 thereof, I find a water wheel governor consisting of the combination with means of operating the water gate in either direction, being shafts 12 and 20, to which motion is transmitted through gears 9 or 10 to gear 11 by the shifting of the reversibly operating clutch, 13, by the action of the magnet 15 or 16, depending on which one is energized; a by-pass for the water wheel 47; a valve controlling said by-pass, 48, and means connected to the water-gate-operating means and operating the by-pass valve inversely to the operation of the water gate. I find in clutch 58, sheave wheel 54 and its mechanical connections to valve 48, through the stem 49, all set into operative movement by the action of electro-magnets 64 actuated by the electric contacts previously described and energizing said magnets 64 on operation of the solenoid through variations in voltage of the dynamo 8 responsive to speed changes of the water wheel.

Referring now to Exhibits E, F and G and line drawing U, and the apparatus there illustrated, and in operation in the Cottonwood plant, about which I have previously testified, I find a water wheel governor having the combination with means ~~of~~^{for} operating the water gate in either direction, being connections from the rock shaft D, connections P, Q, R and S, a stem N, actuating the water gate or needle valve; a by-pass for the water wheel; a valve controlling said by-pass and means con-

nected to the water-gate-operating means and operating the by-pass valve inversely to the operation of the water gate, in connection U and R, the latter pivotally mounted at T.

Referring now to the apparatus installed in Division Creek number 2 and as illustrated in photographs H, I, J, K, L and line drawing Exhibit V, I find elements identical and complete with those set forth in claim 6, as follows: A water wheel governor, ~~with means~~ a water wheel gate, of means for operating the water gate in either direction, cylinder FF actuated by governor parts previously described, together with its gear connections GG, rock shaft HH and connecting rod II, gate-operating shaft LL, ^{stem} double lever NN, operatively connected to water gate MM; the by-pass for the water wheel and a valve controlling said by-pass; of means connected to the water-gate-operating means LL and operating the by-pass valve inversely to the operation of the water gate through double lever NN, pivot RR, and by-pass valve and valve stem which I now designate on Exhibit V as "by-pass valve stem" and on Exhibit U I similarly designate the by-pass valve stem, it being in dotted lines in both of these exhibits as it goes throughout most of its length within the casting and is a straight stem connection to the valve at the outlet nozzle or pipe, and having connections at the other end, as testified to, with the dashpot cylinder, and through the body of oil contained in the dashpot, to the piston therein, and piston rod UUU, pivotally connected to the double lever NN at RR and SS.

Referring now to claim 7 of the Lyndon patent in suit and to the drawing figure 1 thereof, I find a water wheel governor having the combination therein with means for operating the water gate in either direction from normal position as already set forth above in my answer; a by-pass for the water wheel and a valve for such by-pass, as set forth above in my answer; of means connected to the water-gate-operating means and adapted to operate the by-pass valve from normal position in either direction, as set forth above in my answer, so as to control such valve inversely to the control of the water gate, as set forth above in my answer, during the governing action of the water gate, as set forth above in my answer, and means for returning the by-pass valve to normal position on completion of governing movement of the water-gate-operating means. I find this element clearly set forth in the returning of the valve 48 in by-pass 47 through the action of weight 70 acting in dash-pot casing 69, figures 3 and 4 of the Lyndon drawings, which returning action takes place on the de-energization of electro magnets 64 on the interruption of the contacts 100, 101, 103 and 104 as previously described.

Referring now to the apparatus as installed at the Cottonwood plant and as previously testified to, and to the photographic Exhibit F, I find the connection U and behind it in the obscure dark portion, so as to be impossible to show in the photograph, the oil dashpot, or as Mr. Scattergood and Mr. Heinze have testified to, the hydraulic cylinder mounted with the by-pass valve stem to connect the by-pass valve with the operating lever through the connection U, and springs mounted on each

side thereof, so that when the by-pass valve has been shifted from its normal position through the governor action before described, the by-pass slowly returns to normal position under the action of the springs by the passing of oil from one side of the cylinder to the other through a port under the control of the adjusting screws, this movement of the by-pass valve taking place after the completion of the governing movement of the water-gate-operating means, so as to slowly retard the water column in the supply pipe and prevent inertia effects.

Referring now to photographs Exhibits H and I, showing the corresponding apparatus in the Division Creek number 2 plant, this oil dashpot or hydraulic cylinder and its associated springs, being the means for returning the by-pass valve to normal position on completion of governor movement of the water-gate-operating means, is shown as OO, and WW. The two adjusting screws with square heads are clearly shown in this picture.

Referring now to claim 8 of the Lyndon patent in suit and to the drawings disclosed in said patent, I find therein a water wheel governor, in combination with a shaft for operating the water gate in either direction from normal position, a by-pass for the water wheel and a valve for such by-pass normally held in partly open position, an operating device for said valve provided with means for returning the valve to normal position, all as testified to above; and in combination therewith a clutch, adapted to connect said operating device for the by-pass valve with the water-gate-operating shaft, to control the by-pass valve inversely to the water gate, said

elements are found in clutch 58, sheave 54, magnets 64 and connections as previously testified to; reversing means for operating the water-gate-operating shaft in either direction; a controller, responsive to the speed of the water wheel, and controlling said reversing means, all as previously testified to; and means operated by said controller to bring the aforesaid clutch into operation and to release said clutch when the governing action is effected, I find in contacts 100, 101, 103 and 104, actuated from the connections to the solenoid and under the control of movements produced therein by the voltage variations in dynamo 8, all as previously testified to.

Referring now to the devices previously testified to as existing in the Cottonwood plant and the Division Creek plant number 2, and referring to that element previously referred to as the hydraulic cylinder or oil dashpot in the train of connections for operation of the by-pass valve from the water-gate-operating shaft, it will be noticed that springs are mounted upon each side of said cylinders for the purpose of producing the requisite displacement pressure to restore said by-pass valve after its disturbance from normal position by the action of the governor. Said springs are not put into operation except by such displacements as are brought about by the reversing means of the governor operated by the controller, and are therefore set into operation during governor action and released when the governing action has been effected, and as such act in the same relation as the clutching means in the Lyndon patent which pick up the weights 70 in the dashpots 69, and

221 2 with means

225 insert bottom of page "It is understood and
agreed that the cross-examination of Mr.
Henry may be made in San Francisco during
the latter part of next week, and that he will
appear for that purpose, or at such time and
place as may be hereafter agreed upon. Com-
plainant's counsel also reserves the right to
recall Mr. Henry for further examination,
subject to the usual further cross-examina-
tion, as to any such testimony, at any time
prior to the completion of Complainant's
prima facie case."

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which are released from said weights after the governing action is effected. Said springs on the oil dashpots in the Cottonwood apparatus and the Division Creek number 2 apparatus are shown respectively on line drawings Exhibits U and V and are shown in the photographs of the Division plant just above the floor line and under the point marked 00 in paragraph H, shown on both sides of the by-pass dashpot cylinder, one of these being marked WW in photograph I, and as testified to by Mr. Scattergood and Mr. Heinze, and serve the purpose of forcing oil through the by-pass of said dashpot when they are brought into operation as aforesaid, and permitting a displacement of the by-pass valve with respect to the movement of the governor rock shaft. If the rate of return permitted by the adjusting screws in this dashpot is faster than the movement of the governor, said by-pass valve is not under such slow governor movement displaced from its normal position. In such cases as the governor movement is sufficiently rapid to "pick up" said springs by displacing the dashpot and the by-pass valve, the action that then takes place is exactly the same as that in the Lyndon patent from the energizing of the magnets 64 and operative rotation of sheave 54 by the engagement of clutch plate 58 through the making of the circuit through the previously mentioned contacts 100, 101, 103 and 104.

San Francisco, California, January 22, 1914,

2 o'clock P. M.

This being the time and place to which the further taking of depositions was continued, the taking of depositions was resumed.

W. H. L. Lisen

PRESENT:

RAYMOND IVES BLAKESLEE, Esq., solicitor for Complainant.

JOSEPH F. WESTALL, Esq., solicitor for defendant.

C. L. CORY, a witness produced on behalf of complainant, being first duly sworn, testified in answer to interrogatories by complainant as follows:

DIRECT EXAMINATION.

Mr. Westall: At this time counsel for the defendant objects to the calling of Professor Cory as a witness, and to his testifying in this case, until after the examination of the complainant, Mr. Henry, it having been heretofore agreed that Mr. Henry's testimony would be taken in San Francisco, and it being understood that that testimony should follow the usual course and be taken in its proper place at the conclusion of the calling of the testimony of Mr. Henry. It was not understood that counsel for complainant could put in his entire prima facie case in the absence of cross-examination. No right to cross-examination was waived.

Mr. Blakeslee: We deny any such agreement as specified by counsel for the defendant. The record shows that the only agreement was that counsel for the defendant should have opportunity to cross-examine the witness Henry in San Francisco. Notice was further given that Mr. Henry might be recalled for further testimony and it is our purpose to recall Mr. Henry, and after the conclusion of his direct examination counsel for the defendant may cross-examine him. There is no

stipulation in this record permitting counsel for the defendant to postpone cross-examination of any witness further than as specified as to Mr. Henry. Counsel for complainant and Mr. Henry and the Special Examiner were present as per adjournment taken last week on the morning of this present day, at which time counsel for the defendant, had he appeared, might have cross-examined Mr. Henry.

Mr. Westall: Counsel for the defendant wishes it to appear of record that the reason of his delay was the delay of the train caused by causes over which he had no control; and if counsel for complainant had proceeded as he had a right to go on with the testimony this morning in the absence of counsel for the defendant, he could have gone on.

Q. 1. By Mr. Blakeslee: Please state your name, age, residence and occupation.

A. My name is C. L. Cory; age, 41; occupation, teacher of engineering, and consulting engineer.

Q. 2. In what institution do you teach engineering?

A. University of California at Berkeley.

Q. 3. Will you please state what scholastic and technical training you had prior to teaching engineering and entering upon your profession as a consulting engineer?

A. After graduation from the common schools I entered Perdue University in Lafayette, Indiana, and graduated from a course in mechanical engineering in June, 1889, and I was an assistant in the electrical laboratory at Perdue for one year, and entered Cornell University at Ithaca, New York, as a graduate student, in October, 1890, and received the degree of Master of Mechanical

Engineering there from Cornell in June of 1891. I taught engineering in Highland Park College, Des Moines, Iowa for the academic year 1891-92, and was elected to an assistant professorship in the University of California in September, 1892, and have been connected with that institution continuously since that time.

Q. 4. Are you acquainted by scholastic training or experience with any other branches since, or lines of engineering work, than that specified?

A. I am acquainted, and, to a certain degree, experienced in other lines, not so much by scholastic training as from experience as a consulting and advisory engineer, the other related lines being specialties such as the production of power from fuel such as steam engines, steam turbines, gas engines and the like, and especially during the past 13 years with the development of power from water-power, primarily, for the purpose of converting the water power into electrical energy. My experience in this line has been to a considerable extent in practically all of the western states.

Q. 5. Aside from your practical experience in hydraulic power generation, have you or have you not had any training in that direction by a course of study or otherwise?

A. I could best answer that by saying that any training I may have had by course of study would be of a very general and—as applied to real problems of hydraulic generation and transmission of power—of a general character rather than of a special character, because almost every problem or every case where water power is used for the generation of electric power there

are special detailed requirements which are of greater importance than that which could possibly be covered by any general course of instruction given in any institution.

Q. 6. In your engineering courses of study did you or did you not pay attention to electrical subjects?

A. Yes; I paid attention to electrical subjects.

Q. 7. And read the text books on those subjects?

A. Yes sir.

Q. 8. Have you had any experience prior to giving your present deposition in connection with litigation involving alleged infringements of patents?

A. I have; yes sir.

Q. 9. Can you identify such experience by the case in which that experience was had?

A. One case, and, I should say, by far of the greatest importance and of the greatest engineering and electrical and mechanical importance was a case wherein the Otis Elevator Company was suing the Van Emmon Elevator Company for an infringement of a number of patents, and primarily a patent by Mr. Baxter.

Q. 10. Where was that suit brought, if you remember? That is, in what court?

Mr. Westall: Counsel for the defendant objects to the question as incompetent, irrelevant and immaterial.

A. I cannot answer that question. I don't know. I remember that the testimony was taken before Master in Chancery Heacock in the Federal building on Sansome street in San Francisco.

Q. 11. By Mr. Blakeslee: What general type of elevator was involved in those proceedings?

Mr. Westall: Counsel for defendant objects to that line of question as having absolutely no pertinence to any issue raised or which could be raised in the present case.

Mr. Blakeslee: The evidence that counsel for complainant is eliciting is for the purpose of laying the foundation for the further testimony of the witness as an expert.

A. The general type of elevator was especially the electrical elevator, both manually and automatically controlled. But there was in this case elevators of the hydraulic type, the control and operation of which was to be by electrical means, and the operation of electrical circuits and contacts, and controlling and operating devices.

Q. 12. By Mr. Blakeslee: Did or did not your testimony in that case involve these mentioned electrical factors?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. Yes sir.

Q. 13. By Mr. Blakeslee: In connection with your testimony in that case did you have occasion to examine any letters-patent of the United States?

Mr. Westall: The same objection is repeated.

A. Yes sir; quite a number of patents.

Q. 14. By Mr. Blakeslee: Have you examined the letters patent to Lyndon in suit in this case at bar—patent number 695220?

A. I have.

Q. 15. Have you familiarized yourself thoroughly with the disclosures and contents of the same?

A. I have examined the patent and studied the same, and believe that I fully understand the patent and the operation and construction of the mechanism and details therein mentioned.

Q. 16. I call your attention to Complainant's Exhibit C, and to the figure 1 of the Lyndon patent in suit, and I will ask you to tell me whether or not you can trace any analogy between the showing of that exhibit and the said figure in the patent.

Mr. Westall: Objected to as incompetent, irrelevant and immaterial, there having been no sufficient foundation laid for the introduction of the exhibit referred to, and it not having been shown to be an accurate diagrammatic representation of the parts shown in the patent in suit.

A. Figure 1 of the Lyndon patent and Exhibit C of the complainant, both, in substantially the same manner, represent diagrammatically the devices and electrical circuits of the device and mechanism described in the Lyndon patent; and after very carefully examining both figure 1 of the Lyndon patent and Complainant's Exhibit C, I find that the same numbers have been used in each to signify the various and different parts and elements of the complete device.

Q. 17. By Mr. Blakeslee: As to the forms and shapes of the features shown in both figure 1 of the patent in suit and Complainant's Exhibit C, do you or do you not find comparative differences?

A. I find comparative differences only due to the representation of figure 1 of the Lyndon patent in what is commonly known as perspective, while in complainant's

Exhibit C the various elements of the complete operating device are shown in plan or in elevation, and the electrical circuits of figure 1 of the Lyndon patent by the curved or irregular lines representing the wires, while in Complainant's Exhibit C such circuits or wires are represented by straight lines.

Q. 18. More particularly or further I was inquiring as to the structural elements and mechanical parts. Now, comparatively, do you or do you not find differences as between these two drawings?

Mr. Westall: Counsel for the defendant objects to the question as having been already fully answered by the witness, and also that it amounts to cross-examination of the witness.

A. I could best answer that question by saying that I find no differences except that which would be apparent from the fact that figure 1 is shown in what is known as perspective, while Complainant's Exhibit C is shown in plan.

Q. 19. By Mr. Blakeslee: Then am I to understand that what is shown in figure 1 of the patent in suit is likewise fully shown in Complainant's Exhibit C.

Mr. Westall: Objected to as having been fully answered.

A. Yes sir. That is a proper understanding of my previous answers in connection with this matter.

Q. 20. By Mr. Blakeslee: Will you now please state with as much brevity as possible, taken in connection with completeness, the construction and operation of the mechanism or apparatus disclosed in the patent in suit,

together with the general interrelation of the parts and features thereof?

A. Referring especially to the representations as set forth in figure 1 of the Lyndon patent, I shall first attempt to as briefly as possible describe the elements as represented in figure 1, without reference to the numbers. There is there shown a wheel or turbine driven by water. Primarily the complete system is intended and, in my opinion, will satisfactorily operate to modify the amount of water admitted to the water wheel through its wheel-gate, and during such modification or change of the amount of water so admitted, there is also operated and water flowing into the by-pass in all instances, so that where there is a material change in the amount of water delivered to the water wheel through the wheel-gate, there is an inverse change in the amount of water which is allowed to go through the by-pass and not be admitted to or through its wheel-gate. The means employed to so inversely or in a contrarywise method change the amount of water delivered to the wheel, as compared with the amount of water which is allowed to by-pass, consists of certain mechanical shafts, gears, clutches and an electrical generator, the circuits from which are carried to various contacts, so that the variation of speed of the wheel due to any cause, but in practical operation primarily due to the change in the load upon the wheel, will automatically accomplish the result I have previously stated, namely: Where there is a material variation of the speed of the wheel, the amount of water delivered to the wheel through its wheel-gate is practically at the same time accompanied with a varia-

tion in an inverse way of the amount of water by a change in the by-pass valve and by-pass pipe.

Q. 21. Will you please designate separately by the reference characters on the drawing of figure 1 of the Lyndon patent in suit the several separate leading elements or groups of elements which are utilized in the performance of the operation or the production of the results you have specified?

A. The principal elements set forth in figure 1 of the Lyndon patent and, in an equivalent manner, set forth in Complainant's Exhibit C, consist of an inlet pipe 1 to a wheel -casing 2. The main shaft of the wheel is represented as 3. On one end of the wheel shaft 3 there is a beveled gear 4, at all times meshing and driving beveled gear 5, which is rigidly connected to the shaft 6, which causes pulley 7 to be driven at a speed which bears a definite relation at all times to the speed of the main water-wheel shaft. Pulley 7 is connected, as shown in figure 1, by the belt to a direct-current dynamo 8, of what is known, in general terms, as a constant voltage or constant potential type, by that meaning that as long as the speed of such direct current dynamo is maintained constant, the voltage of the current available from such dynamo is constant. From dynamo 8 there is a circuit carried to an element, as described by Lyndon in his patent, namely, a solenoid 33, which is in essence a controlling device. Now, as long as the speed of the dynamo remains constant, which it will if the speed of the main wheel remains constant, the electrical current in the controlling magnet or solenoid 33 is just of sufficient quantity so that the iron core 34 of solenoid 33 is not

moved at all. The position of this core 34 is controlled by two springs, one of which bears the number 37 and the other the number 38. Other essential elements of the complete system as described in the Lyndon patent pertains to the operation of the complete mechanism upon any variation of speed of the main water wheel shaft, as follows: Let us assume that the speed is increased, which would in practice be due to a reduction in load or the amount of work required at any particular time of the water wheel. Dynamo 8 is so wound and so designed that upon an increase of speed the voltage of this dynamo will be increased at a greater rate, or, in proportion, decidedly greater than such increase than such increase of speed. Lyndon in his patent describes the dynamo 8 as so constructed that the increase in the voltage of the current supplied from said dynamo will be practically in proportion to the square of the increase of the speed. Controlling magnet 33 is so connected by wires with dynamo 8 that as the voltage delivered by the dynamo is increased the core of the solenoid 33 will be drawn further within the magnet, which motion will be opposed by spring 38. Through suitable devices a lever arm 26, pivoted at 26a, is connected with the core 34 of the controlling magnet, and as core 34 is drawn by the increased voltage resulting in the increased current in the magnet 33, contacts 40 upon the upper end of the lever 26 will be moved so as to deliver electrical current from wires 93 and 92, also connected with the dynamo, to the wires 106, which lead to an electro-magnet 15. Electro-magnet 15 having current delivered to it will attract the armature 17 on the upper end of lever arm

14. Shaft 6 passes through two beveled gears loose upon this shaft, but which may be made to rotate with the shaft by means of a sleeve which acts as a clutch. As armature 17 is drawn toward magnet 15, it will cause one of these loose bevel gears 9 to 10 to rotate with the shaft 6. Bevel gear 9 will then be meshed with its mate bevel gear 11, which is rigidly and solidly connected with shaft 12, and shaft 12 through screw 18 will, if it is in motion itself, also set into rotation shaft 20. To return to the result when the speed is increased, bevel gear 11 will put in motion shaft 12 which will put into motion a sheave 54, which through suitable ropes, weights and casings, will operate on valve 48 in the by-pass 47, thereby modifying the amount of water flowing through such by-pass. At the same time through lever 43, which is actuated by the core 34 being drawn within magnet 33, circuits will be closed which will energize or cause electric current to flow in the coils of compensating magnet 64, which will attract the armature 63 on the end of lever arm 61, and cause bevel gear 21 meshed with 21a to rotate in such a direction as to reduce the amount of water delivered to the wheel, which will also result ultimately in the restoration of the proper speed. Other material devices are as follows: First, a so-called returning device, which is operated by a rod 25 upon which there are mounted springs 27, 28 and 29, which returning device is actuated by any movement of the lever arm 26. Lever arm 43 is so connected through a bell crank 42 that it makes no difference whether the core 34 is moved either within the controlling magnet 33 or its motion is to make it come out of the magnet. The lever arm

43 is moved in the same direction. And if it moves sufficiently far it will cause contact 45a to come in contact with 45 and complete the electrical circuit, and contact point 46a to come in contact with contact 46, finally **completing the circuit**, and it is to be noted that contact 45 and 46 are connected through wires to 102 leading to returning magnet 32. Returning magnet 32, if the current flows within it, will attract its armature 31 on the end of lever arm 41 pivoted at 24a, which by means of a yoke is connected to one-half of the sleeve clutch 23, which will cause it to come into contact with the other half 22, thereby giving it a slight rotary motion, and through the rod 25 will tend to restore equilibrium in the operation of the entire system as soon as uniform speed has been restored. There are certain contacts on the circuits leading to magnet 64, notably contact 75, which will be open if sheave 54, operating by-pass valve 48 is rotated to a sufficient degree, that will tend to prevent the wheel gate from being allowed to over-run as operated through bevel gears 21 and 21a. Similarly there are other circuit breakers as described by Lyndon leading to magnet 16, connected through wires 106, the circuit breakers being represented by arms 85 and 84 pivoted at 84a and 85a. Similarly his magnet 16, operating a clutch so connected through circuit breakers. I think I have described every important element in the mechanism with the possible exception that it is to be noted that on the lower end of lever arm 43 by the electrical connections contact 45a is duplicated at contact 100 and contact 46a is duplicated at contact 101; and, as Lyndon describes his patent, these contacts may be mercury cup contacts. It is evident to

one skilled in the interpretation of the operation of such contacts that, as desired, contacts 45 and 46 may be made to precede, if you please, the making of contacts to 103 and 104 which lead to circuit 105, and the operation of the compensating magnet 64. I should conclude by saying that the variation of the speed of pulley 7 which bears a very definite and absolute relation to the speed of the main water wheel shaft 3, will, through its variation, correspondingly, but to a greater extent, vary the voltage delivered by dynamo 8, and through the devices that I have described, if the speed of the main water wheel is increased or caused to increase, the result will be, first, that the supply of water will be reduced to the water-wheel, but at the same time, the amount of water allowed to go through the by-pass will be decreased. Contrary-wise, if an excessive load comes on the water wheel, causing the speed of the water wheel shaft to be decreased, the amount of water delivered to the water wheel will be increased, but there will be a decrease in the amount of water going through the by-pass, and the entire mechanism will be returned to equilibrium by the controlling magnet 33 just as soon as the proper speed or normal speed is maintained. It is manifest that the mutual operation of the amount of water delivered to the water wheel and through the by-pass will, through all the conditions of regulations, not materially and suddenly change the amount of water in the pipe line, and, therefore, the device eliminates the dangers resulting from the inertia of the water in the pipe line.

Q. 22. Now, as to the results following the decrease of speed of the shafts 3 and 6 and of rotation of the

armature of the generator 8, which of the magnets 15 and 16 is energized through the movement of the lever arm 36?

A. That is due to a decrease of speed in shafts 3 and 6?

Q. 23. Yes.

A. The decrease in the speed of shafts 3, 6, pulley 7, causes a reduction in the voltage supplied by dynamo 8.

Q. 24. And which of the magnets 15 and 16, responsive to the movement of the core 34, in that case will be energized by the movement of the lever arm 36?

A. The result of the movement of lever arm 26 due to the reduction of voltage in dynamo 8 will be that the core 34 will move out of controlling magnet 33. If it moves out sufficiently far it will make contact 41 and allow current to pass through contacts 41a. That will energize magnet 16.

Q. 25. And when magnets 16 are energized what will result?

A. When magnet 16 is energized it will attract armature 17 which, through the sleeve on the other end of lever arm 14, will tend to cause bevel gear 10 to rotate with shaft 6, and will cause bevel gear 11 meshed therewith to set into motion shaft 12, and, through worm 18, the screw gear on shaft 20, and reduce the amount of water going through the by-pass, and, at the same time, open up the wheel gate through gears 21 and 21a, increasing the amount of water to the wheel which will cause an increase in the speed of the wheel.

Q. 26. What is the nature of the contacts 40 and 40a,

and, similarly, the nature of contacts 41 and 41a, as specifically disclosed in the Lyndon patent?

Mr. Westall: The question is objected to as vague and indefinite.

A. To read from the patent on page 2, lines 45 and thereafter, "Contacts 40 and 41, at its", referring to lever arm 26, "respective ends, adapted to engage with contacts 40a and 41a connected to the respective magnets," and, not quoting from the patent, by respective magnets the specifications of the patent refer to the magnets 15 and 16. Or, to put it in another way, contacts 40 and 40a control currents to magnet 15; contacts 41 and 41a control the current to the magnet 16.

Q. 27. By Mr. Blakeslee: Now, is there any further disclosure in the specification or drawings of the patent in suit as to the form of contacts employed, namely, 40 and 40a, and 41 and 41a?

Mr. Westall: Objected to on the ground that the patent speaks for itself for what it contains.

A. There is in the drawing figure 6 a representation of contacts 40 and 40a, and 41 and 41a, which indicate that they are mercury contacts.

Q. 28. By Mr. Blakeslee: What results attach to the use of such mercury contacts at 40 and 40a and 41 and 41a, and at 45 and 45a, and at 46 and 46a, and at 100 and 103 and 101 and 104, as you have previously testified?

A. Being mercury contacts the relative length of the metal stem which enters into the mercury can be so adjusted as to get any sequence that is desired in the opening or closing of such contacts which would not normally

be as easily regulated if they were contacts made of solid metals only, such as copper or brass or platinum.

Q. 29. Can you testify of your own knowledge as to whether such mercury contacts were known and employed at the time of the application for the patent in suit, namely, in the year 1900, whenever their selection and use was for any reason desirable?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. There is no question that such mercury contacts were used for a great many years before the time of the application for the patent on September 13, 1900.

Q. 30. By Mr. Blakeslee: Due to the employment of these mercury contacts specified, or in their employment, what sequence of circuit closings through the magnets 15 and 16, and the magnets 32, and the magnets 64 takes place?

A. The sequence in the practical operation of the complete system would be the closing of contacts 40 with contacts 40a, or if the opposite result is desired to that which would come about by the closing of 40 with 40a, opposite result being the closing of contacts 41 with 41a, that would be the first result. That is manifest because either magnet 15 or magnet 16 will have to be energized before any mechanical motion whatsoever is transmitted to the shaft 12 and through shaft 12 to the shaft 20. Contacts 45a and 45, 46a and 46, will tend to close the circuit and send current through the returning magnet 32. Subsequently, if desired, 45a and 46a can be caused to close the circuit 105 leading to magnet 64, to contacts 103 and 104, magnet 64 being the compensating magnet which

operates solely upon the water gate, while magnet 32 through its armature 31 controls the motion either continued or intermittently to be transmitted to shaft 12. It should be stated here, to make clear that contact 45a and contact 100 are practically the same, being connected together electrically; similarly, contact 46a and contact 101 are practically equivalent, being electrically connected together.

Q. 31. Now, herefore, as to the sequence of energization of the magnets 15 or 16, as the first group, of the magnets 32, as the second group, and of the magnet 64, as a third group, what is that order of sequence in the operation of the apparatus of the Lyndon patent in suit?

A. The sequence would be either the energization of magnets 15 or 16 first; next, the energizing of magnets 32; and, finally, the energizing of magnets 64.

Q. 32. Now, will you please a little more fully describe the mounting of the shaft 20 and its operative relation to shaft 12 and the gate shaft b? You have testified that this shaft is operated to cause the gear 21 to mesh with the gear 21a. Will you please state in your answer, what, if anything, causes such motion?

A. Shaft 12 drives a portion of shaft 20 through worm wheel 18, screw 18 and worm wheel 19. Bevel gear 21, however, will not be rotated with shaft 20 unless compensating magnet 64 attracts its armature 63, thereby operating the disc clutch 58-57. Hence the name of magnet 64—"Compensating magnet".

Q. 33. Will you please refer to the specification of the Lyndon patent in suit and quote such portions there-

of as relate to the operation of gear 21 and of the clutch 58 and sheave 54?

A. Quoting from the patent at line 98 on page 1, "On the shaft 12 is mounted a worm 18 meshing with a worm wheel 19 on shaft 20. The shaft 20 also carries a bevel or spur gear 21 which meshes with another bevel or spur gear 21a situated on the shaft 21b, which operates the water wheel gate, (the latter not shown)".

Again, on page 2, line 78; "The double sheave or pulley 54 is mounted on shaft 20 so as to be free to rotate thereon, being held from endwise movements by collars 56. A clutch consisting of corresponding discs or cones 57, 58, respectively, and said sheave on hub 59, mounted on shaft 20 so as to move endwise, but compelled to rotate therewith by a spider connection 58a, enables the sheave to be clutched to the shaft, this operation being controlled by a lever 61 pivoted at 62 and having a fork engaging in an annular groove in said hub. The other end of this lever carries the armature 63 of the compensating magnet 64."

Q. 34. Now, when the sheave 54 is clutched, as described, to shaft 20 what takes place?

A. The by-pass valve 48 will be operated.

Q. 35. And what, if any, effect would that have upon gear 21?

A. I don't know that I can answer your question in any other way but to say that gear 21 is rigidly connected to shaft 20 and will naturally rotate with shaft 20 quite independent of whether the movable double sheave 54 is caused to rotate with the shaft 20 by the action of the clutch 57-58 or not.

Q. 36. Then how as to your previous testimony that the energization of the magnets 64, as I understood you, caused the gear 21 to be clutched with the gear 21a? Will you please state fully on this point?

A. If I said that the energizing of magnet 64 and the resultant action upon its armature 63 had any effect upon the motion of beveled gear 21, I made an erroneous statement.

Q. 37. And I understand that whenever shaft 20 turns, bevel gear 21 must turn and bevel gear 21a upon the other shaft 21b must also turn?

A. Yes sir.

Q. 38. Will you please point out the operation of the parts designated as 70 in the specifications and drawings?

Mr. Westall: Objected to. The patent shows for itself very clearly what parts are designated as 70 in the patent, and the pointing out by the expert cannot possibly make it any more clear.

A. In the drawings of the Lyndon patent parts 70 are best shown in figure 4. On page 2, line 92, we find the sentence: "On the ropes 51, 52, are lugs or clamps or stops 65, 66, adapted to engage under and lift weights 70, 70, when the sheave is turned either way from normal conditions, these weights being guided in casings 69 on a suitable fixed support and means may be provided for easing off the descent of these weights if desired. For example, the casings 69 may constitute dashpots."

Q. 39. By Mr. Blakeslee: Now, what will the effect of this combined weight and dashpot operation be with respect to the by-pass valve?

A. The effect of the weights and dashpot effect will be to slightly delay any motion transmitted to the by-pass valve 48 through the partial rotation of sheave 54 caused by the clutch 57-58 being operated through the attraction of the armature 63 by the compensating magnet 64.

Mr. Westall: Counsel for the defendant objects to the begging of the question by calling the action of the weights a dashpot effect.

Mr. Blakeslee: Attention is merely called to the preceding answer of the witness which fully points out this action quoted from these specifications.

Q. 40. By Mr. Blakeslee: Now, when the circuit is broken through the electro-magnets 64, what will be this combined dashpot and weight action on the by-pass valve?

Mr. Westall: Objected to upon the ground that it has not been shown that its effect is a dashpot effect.

A. I can best answer your question by quoting a paragraph found in the patent on page 4, beginning with line 99 and ending with line 105, which reads: "When the governing is completed, the controlling solenoid allows the lever 26 to return to normal position, the circuit of the compensating magnet is broken by the return of rod 36 and lever 43, and the butterfly valve returns slowly under the influence of its weight 70 to normal position." The effect of weight 70 and the casing in which they operate, 69, being to prevent rapid and sudden motion of the butterfly valve 48.

Q. 41. By Mr. Blakeslee: Now, will you please state what the sequence of de-energization is as to the groups first, magnets 32, second, magnets 64, and third, magnets

15 or 16, in the operation of the apparatus of the Lyndon patent in suit?

Mr. Westall: Counsel for the defendant objects to the question as being thoroughly covered by the prior explanation of the witness as to the operation of the patent in suit and being mere repetition.

A. Referring to the patent itself, line 104 on page 1—

Q. 42. By Mr. Blakeslee: Pardon me. If the witness will permit, I will call attention to the fact that I am not asking him how the sequence takes place but merely as to what the sequence is, namely, the order of precedence of the several de-energizations.

A. The sequence would be to de-energize either magnet 15 or 16 first which sets the governor in operation, and then to de-energize the magnet 32, and then subsequently 64.

Q. 43. You have testified that the circuits are completed through the mercury contacts controlling the magnets 32 and 64 subsequent to the completion of the circuits through the mercury contacts controlling either the magnets 15 or 16. What bearing has this upon this kind of sequence of de-energization of the several groups of magnets through these mercury contacts which you have described?

A. It has this bearing: That the operation of lever arm 26 through its being connected flexibly by springs through the loosely mounted clutch part 22a, lever arm 26 will be returned to its original position, thereby effecting contacts 40-40a or 41-41a, and, indirectly through the bell crank 42, actuating contacts 45 and 45a, 46 and 46a, 100 and 101, 103 and 104.

Q. 44. Now, assuming that the contacts 40 or 41 were more deeply immersed in the mercury contact 40a or 41a, with relation to the immersion of the contacts 45a in the mercury contacts 45, or with relation to the immersion of the contacts 100 in the mercury contacts 104, or the contacts 46a in the mercury contacts 46, or the contacts 100 in the mercury contacts 103, at which groups of contacts are the circuits first broken at the groups 40 and 40a or 41 and 41a or at the groups just otherwise designated?

A. The circuits would be opened earlier at groups 45a, 45, 46a, 46 and 100, 103, and 101, 104.

Q. 45. Now, under these conditions which magnets would be de-energized first, the magnets 15 or 16 or the magnets 32, or the magnets 64?

A. Magnets 32 or 64 would be de-energized before magnet 15 or 16.

Q. 46. Then do you find anything in the specifications or drawings of the Lyndon patent in suit which is contrary to the sequence of the de-energization as just testified, namely, that magnets 32 and 64 are de-energized prior to the magnets 15 or 16?

Mr. Westall: That is objected to on the ground that the patent speaks for itself and on the ground that the question calls for evidence which is not the best evidence.

A. I find nothing in the specifications whatsoever.

Q. 47. By Mr. Blakeslee: My question was if you found anything contrary to it?

A. That is what I meant. I find nothing contrary to the sequence which you describe.

Q. 48. Now, with respect to the actuation of the sev-

eral working parts of the apparatus disclosed in the Lyndon patent in suit, where that actuation is produced consequent upon the motion of the parts so set into motion by electro magnetic means, what have you to say with respect to the positiveness of such actuations in comparison with actuations caused entirely mechanically.

Mr. Westall: I object to the question as incompetent, irrelevant and immaterial, and as not affecting any issue involved in this case.

A. The positive actuations of the various parts as described in the Lyndon patent, which even in the Lyndon patent are evidently mechanical, are, in the same way positive as if the actuations were entirely mechanical and not originally caused by electro magnetic means. In other words, the electrical details or elements in the Lyndon patent serve solely to ultimately produce mechanical action.

Q. 49. By Mr. Blakeslee: Now, if the actions were all mechanical in this apparatus of the Lyndon patent in suit, what have you to say as to the element of lost motion or slippage as compared with such element, if present, in the apparatus organized as disclosed in the Lyndon patent?

A. I really don't know how to answer that question as to whether there would be any difference as regards slippage or lost motion as far as the ultimate results are concerned. In my opinion there would not necessarily be any essential difference.

Q. 50. As between a construction in which a part B is actuated from a remote point A through an electromagnet, and an electrical path, and a construction in

which the part B is actuated from a remote point A through a plurality of connected mechanical parts, in which construction would you expect to find, if in either, the greater amount of slippage or lost motion?

Mr. Westall: Objected to as already having been fully answered by the witness in the previous answer and also as being incompetent, irrelevant and immaterial.

A. I would not expect to find necessarily any difference, because of this fact: In the Lyndon patent—

Q. 51. By Mr. Blakeslee—(Interrupting): Pardon me. Please in this answer confine yourself to that hypothesis. I am not referring to the Lyndon patent.

A. Oh, I see. I beg your pardon. Because the desired regulation for constant speed of the water driven wheel is accomplished solely and only by mechanical means, the introduction of electrical devices being in my opinion merely incidental to the production of the results through mechanical motion—

Q. 52. (Interrupting) I will ask the witness to please answer the question as put, if it is clear to him, and, if not, to so state. And I call his attention to the fact that I am not asking him to testify as to water wheels or any other definite apparatus, but merely asking him to answer as to the pre-supposed imaginary condition such as is specified in the question.

Mr. Westall: The same objection is repeated.

A. In answering the question I have introduced purposely the word “Necessarily” but I think I should expect to find more lost motion or slippage of the part B where operated from a remote point A mechanically, than if some intervening electrical system were introduced.

Q. 53. By Mr. Blakeslee: Am I right in understanding from your previous testimony that you have had practical experience and practically observed the operation of water wheels?

A. Yes sir.

Q. 54. And have you had actual experience with and practically observed the operation of water wheels?

A. Yes sir.

Q. 55. Will you please tell us about those conditions which obtain in penstocks or water supply pipes leading to water wheels and supplying the actuating head of water?

A. In my experience with hydro-electric plants the actual conditions are in almost every case that the mass of water in the penstock or pipe line has inertia, and if the quantity of water delivered from such pipe lines is suddenly changed for any reason, either in an attempt to get a practically uniform constant speed under varying loads or for other reasons, the inertia of the water in the pipe lines or penstocks in motion, if arrested or accelerated, will introduce very undesirable, and, in many cases, dangerous stresses, particularly in the pipe line or penstock, and in the operation of hydro-electric plants, therefore, the conditions that I have described should be prevented for safe and reliable operation of such systems.

Q. 56. Please state whether the installation and use of apparatus such as disclosed in the Lyndon patent in suit bears upon the inertia and other conditions in the water supply pipe or penstock with respect to the water wheel control, protection of pipe line and the like parts?

A. The bearing which the devices as disclosed in the

Lyndon patent has upon the inertia of the water in the pipe lines is direct, in that the giving of constant speed of water wheel, and therefore, the load carried by the water wheel, whether an electrical generator or other power-consuming device, can be accomplished by the use of a by-pass so that sudden changes in the velocity of water flowing in the pipe line or the quantity of water flowing in the pipe line are prevented, and the disclosures in the Lyndon patent indicate the proper and very decidedly advantageous methods of so governing and not at the same time interfering with the flow of the water in the pipe line, in that the operation of the by-pass, if it is desirable to operate it at all through excessive changes in the load, is always inversely or contrarywise to the corresponding variation of the wheel gate admitting water to the wheel itself.

Q. 57. As to which set of conditions is the utilization of the by-pass more important, if under either, when greater or smaller movement of the gate valve or the water gate takes place?

A. The operation of the by-pass is especially important in large or great or excessive variations in the load which, in turn, momentarily, at least, will cause excessive changes in speed.

Q. 58. When the water gate is moved toward closed position what, due to the inertia of flowing water in the supply pipe, is the effect upon the velocity of the water passing the gate?

A. Momentarily closing the gate will tend to increase the velocity, due to the reduction of the area of the opening.

Q. 59. And what effect does this have upon the wheels to which the water is passed?

A. It tends to increase the velocity of the parts of the wheels which is exactly what you do not want to have happen at that instant.

Q. 60. And in this connection how does the by-pass of the Lyndon appartus act?

A. The operation of the by-pass naturally tends to keep as nearly uniform as may be the orifice, thereby eliminating that momentary increase in the velocity of the water in the main pipe line.

Q. 61. By "orifice" what do you mean in the last answer?

A. The opening through which the water flows.

Q. 62. To the wheel, do you mean, in that connection?

A. Yes, sir.

Q. 63. When the by-pass is open upon the moving of the gate towards closed position, do I understand that there is any effect produced by the movement of the by-pass with respect to the orifice, being the passage past the water gate itself?

A. No, sir. The area or opening through which the water goes through the by-pass would not necessarily and does not affect the area of the opening through which the water goes to the water gate itself.

Q. 64. And now how as to the total area of the opening past the water gate and the opening past the by-pass under these conditions?

A. The operation of the by-pass tends to make the total opening of the two constant—the same as the sum of the two openings constant.

Q. 65. And that acts how upon the velocity of the water passing the water gate?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. It tends to maintain conditions uniform.

Q. 66. By Mr. Blakeslee: Now, when the water gate is moved away from closed position, how does the by-pass valve operate?

A. It tends to move toward closed position or in the opposite way.

Q. 67. What effect does that have with respect to the velocity of water passing the water gate?

A. Since the aggregate or sum of the openings of the water gate and the by-pass remain practically constant, it tends to maintain the velocity of the water through the water gate opening uniform, and—

Q. 68. And this maintenance of constant velocity conditions applies then in both cases, do I understand? That is, upon the movement of the water gate to and away from closed position?

A. Yes, sir.

Q. 69. In which case, if either, can you say do the more extreme effects occur with respect to the velocity affecting the water wheel? When the gate is moving toward closed position or away from it?

A. I should say when the water gate is moving away from closed position, or opening wider.

Q. 70. Would the length of pipe line and head of water make any changes as to these matters last inquired about?

A. Yes, sir.

Q. 71. What changes?

A. The length of the pipe line would increase the mass of water in motion. If the comparative size of the pipes were the same it would increase the mass directly as the length, while the increase of head would increase the pressure. So the higher the head the longer the pipe line the more serious would be the effects of inertia, as has been set forth in the questions and answers.

Q. 72. And with a long pipe and greater head would the velocity of water passing the gate on its movement toward closing position be greater than would a shorter pipe line and a lesser head?

A. It would be greater with the higher head and longer pipe line.

Q. 73. And, conversely, would the retardation of the water upon opening of the water gate wider be more pronounced or less pronounced with a longer pipe and higher head?

A. It would be more pronounced. The retardation would be more pronounced with the longer pipe line and higher head.

Q. 74. And which condition, increase of velocity or retardation, if either, do you consider more necessary to correct by the use of the by-pass such as that disclosed in the Lyndon patent in suit with respect to maintaining constant wheel rotation speed and preventing dangerous stresses in the water supply pipe?

A. I should say that the greater dangers would result from sudden retardation.

Q. 75. And upon which motion of the gate valve?

A. Upon its sudden closing or consequent reduction of the motion through the pipe line.

Q. 76. With the longer pipe line and the higher head,

on the one hand, and the shorter pipe and the lower head on the other hand, in which of these conditions would you find greater retardation of the flow of water in the supply pipe or penstock?

Mr. Westall: Counsel for the defendant objects to the question as dealing with matters of theory that are not pertinent to any of the issues involved in this proceeding.

A. I would say the greater retardation would be with the longer pipe and higher head.

Q. 77. By Mr. Blakeslee: And for what reasons, please?

Mr. Westall: The same objection is repeated.

A. The motion of the water through the pipe line at any given velocity is to be compared with the amount of energy represented by the motion of a train of cars and engine. The longer the train and the higher the velocity of the water, any given closing of the outlet will naturally cause a greater effect, because the water in motion cannot be suddenly stopped any more than a train of cars can be suddenly stopped. The faster the water is going the more serious will be the consequences of attempting to suddenly retard the motion of the column of water.

Q. 78. By Mr. Blakeslee: Then in a pipe of given length if the head be increased there will be an overcoming of the retardation of the flow at the delivery end of that pipe. Is that correct?

Mr. Westall: Objected to as leading. The further objection that it is incompetent, irrelevant and immaterial.

A. I should say there would be a greater retardation on account of the increased head.

Q. 79. By Mr. Blakeslee: And why?

A. Because as the head increases for any given opening the amount of water delivered by the opening will be greater and the velocity will be greater.

Q. 80. And am I to understand that that will produce a greater retardation of the flow of water at the discharge end of the pipe?

A. If the water gate is closed or being closed the amount of water that is to be delivered will be reduced, and that means necessarily a retardation or stopping or slowing up of the entire column of water.

Q. 81. And what effect upon the speed of the water passing the gate?

Mr. Westall: Objected to as having already been answered by the witness and amounting to cross-examination of the plaintiff's own witness.

A. The effect would be to momentarily very materially increase the retardation.

Q. 82. By Mr. Blakeslee: My question was as to the effect upon the velocity of water passing the gate under these conditions and not upon the water held back by the gate.

Mr. Westall: The question is objected to as having been already several times answered by the witness. Objected to as very grossly leading and having been fully answered by the witness.

A. It would tend to increase the speed of the water passing the gate.

Q. 83. By Mr. Blakeslee: Now, under these same conditions, if the gate be moved away from closed position will there be lesser or greater retardation of the column of water with a relatively higher head?

A. If the gate is being moved away from closed posi-

tion, momentarily the speed of the water through the water gate will be reduced, but the ultimate result will be not the retardation of the flow of water in the pipe line itself.

Q. 84. And, therefore, with a higher head when the gate is so open will there be a lesser or greater retardation at the gate?

A. There would be no greater retardation at the gate if the head is increased.

Q. 85. With a pipe of given length under low head, and a pipe of the same length under a higher head, in which instance does the velocity reach the maximum earlier, and in which instance does it reach it later, when the gate is opened?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. It reaches its maximum velocity earlier the higher the head.

Q. 86. By Mr. Blakeslee: And how does your illustration of the inertia of a train of cars apply to this answer?

A. My analogy of the train of cars does not apply to this answer because in using that analogy I was considering and, in your question, you stated a greater length of pipe line, which would naturally mean a greater mass of water.

Q. 87. But with a pipe line of the same length and a greater head now does this analogy jibe?

A. I think the way your question is put the analogy would not apply in this case.

Q. 88. Then please give us an analogous case which will fit in this instance.

A. I should say the analogy would be represented by the comparison of the effect of the same train of cars running first at a low speed and then running at an exceedingly high speed, and the effect would be to obtain a maximum earlier at the higher than at the low speed, and corresponding to the same length of pipe line, in the one case with a low head and in the other with a high head.

Q. 89. And, to go further, how as to a train moving over tracks of two inclinations, one greater than the other?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial and as having been previously fully answered.

A. The effect would be the greater the greater the inclination.

Q. 90. By Mr. Blakeslee: Corresponding to which head in the pipe line, the greater head or the lesser head?

A. Corresponding to the greater head with the same length of pipe line.

Q. 91. Can you recollect in your experience any occurrence or incident wherein damage occurred because of lack of provisions of any by-pass governed to operate inversely as to the movement of the water gate?

A. Yes, sir.

Q. 92. Please tell us about it.

A. In one installation under a 1400-foot head without any by-pass whatever, the amount of water delivered from the pipe line was suddenly decreased, resulting in the bursting of the pipe line. I remember another instance in Tuolumne county of the same thing occurring with a pipe line under a 1000-foot head. I happened

to be present at the last occurrence. And I have heard of many instances where the sudden closing of the outlet at the lower end of the pipe line has resulted in sudden stresses in the pipe line resulting in the bursting of the pipe line in one or more places.

Q. 93. Now, if apparatus comprising a jointly governed water gate and by-pass valve constructed to embody the invention of the Lyndon patent in suit had been present in either of these installations, what would have been the result?

A. The result would have been that in the too sudden closing of the water opening to the water wheel or water gate it would not have resulted in suddenly reducing the velocity in the pipe line but would only have resulted in increasing the by-pass discharge, thereby practically maintaining uniform the velocity in the pipe line. I think that would apply in every one of these cases.

Q. 94. Did these breaks coming within your knowledge entail loss or expense to the owners of the plants concerned?

A. Very serious loss not only in cost of repairs, but much more seriously in the shutting down of the plant.

Q. 95. Can you give the names of these plants and their specific locations?

A. The San Joaquin Light & Power Company in Fresno county is the first one to which I referred, and the Tuolumne county Electric Company is the second one to which I referred, at which latter place I was present when it resulted in the breaking of the pipe line itself. In both places I know the plants were shut down for a long time.

Q. 96. What would you estimate as an engineer as the expense or loss—I may say overhead loss—resulting from the suspending of operations and so forth resulting from these breaks in these instances that you have testified to?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. I cannot of my own knowledge testify as to the cost of the break in the pipe line of the San Joaquin Light & Power Company in Fresno county, but I know of my own personal knowledge that the loss by the breaking of the pipe line in the Tuolumne Electric Company in Tuolumne county was between \$18,000 and \$20,000, both for repairs and consequences of cessation of operation.

Q. 97. By Mr. Blakeslee: Can you state what the capacity of this latter plant was in kilowatts?

Mr. Westall: The same objection.

A. The capacity of the latter plant was 1500 horsepower.

Q. 98. By Mr. Blakeslee: Were there any unusual circumstances at this plant or conditions which tended to increase this expense or loss or damage, over and above what might be said to be normal or usual?

Mr. Westall: The same objection.

A. No; I think no unusual conditions whatsoever.

Q. 99. By Mr. Blakeslee: How long have you known Mr. George J. Henry, Junior, the complainant in this case?

Mr. Westall: The same objection.

A. Twenty-one years.

Q. 100. By Mr. Blakeslee: In summary, what have

you to say as to his general standing and ability as a consulting and installing or contracting hydro-electric engineer?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

Q. 101. By Mr. Blakeslee: And also as a designer of hydraulic apparatus for water wheels and the like?

A. I am personally familiar with the work of Mr. George J. Henry, Junior, in the designing and constructing of water wheels, and know of my own personal knowledge that he has been one of the principal men who have developed during the last 20 years the most efficient types of water wheels and water wheel turbines as well as the most efficient and satisfactory pressure pipe lines and methods of regulating and controlling the delivery of water from such pipe lines to water wheels for the generation of power.

Q. 102. Aside from the invention and apparatus disclosed in the Lyndon patent in suit, do you know of any apparatus providing a governed by-pass valve operating inversely to the water wheel gate and which has been in use under your observation?

A. Yes, sir.

Q. 103. What one was that?

A. The one that I think of first is that which was developed by the Pelton Water Wheel Company, and one also developed by the Doble Water Wheel Company, which company I think is out of existence at the present time, for the control of high head pipe lines, in a number of instances.

Q. 104. When did you observe such use?

A. I can't remember the very first observation, but

it was, as I recall it, about 1905 or '6 in a number of the plants on the Pacific Coast.

Q. 105. Do you know whether any of these are in operation today?

A. I am not certain. I believe that they are in operation, or modifications of them, such modifications having been made since that time.

Q. 106. And did both of these apparatus utilize the invention as you have discussed it in analyzing the Lyndon patent in suit?

A. Yes, sir.

Q. 107. Now, in such apparatus, state, if you know, whether it would be possible to set the by-pass valve so as to discharge water either when the water gate was closed or open?

A. Yes, sir.

Q. 108. Would that be possible in using the Lyndon patent apparatus as disclosed in the patent in suit?

A. Yes, sir; it would be possible.

Q. 109. And what would you do to so independently release and set the by-pass valve of the Lyndon patent in suit?

A. I would set the valve so that even in its position of most nearly closing there would still be water passing through the by-pass.

Q. 110. And could you disconnect the by-pass from the governor and the water gate so that it could be used independently in the Lyndon apparatus?

A. Absolutely so, yes, sir.

Q. 111. How would you do that, and illustrate following the drawings in the Lyndon apparatus?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. It could be done in a number of ways. Probably the simplest would be to eliminate either magnet 64 or some of the contacts leading thereto.

Q. 112. By Mr. Blakeslee: Do you know of any other water wheel apparatus excepting those Pelton and Abner Doble apparatus which you say included the Lyndon invention, in which it is so possible to free a by-pass from the governor controlling the same and the water gate so as to permit separate, independent discharge of the water at the by-pass?

A. I don't believe that I know of any other.

Q. 113. Can you state any utilization that could be made of water so passing the by-pass and disconnected from the water gate when, we will say, the water gate was shut down?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. To my own personal knowledge there are a number of ways in which the water going through the by-pass may be utilized, one of which is, if there is a plant lower down using the same water, and it is desired never to shut down the lower plant, no matter what had happened with the other. Another use and one that I remember in my own personal practice, is where water was to be by-passed for domestic purposes independent of the load or the amount of water sent through the water wheel itself. Another actual illustration which I have in mind, is over in Utah where water for irrigation is continuously by-passed. In other instances the utilization of the water for the generation of power was ar-

ranged by contract so that at all times certain water would be by-passed for the purposes of irrigation, independent of the amount of water desirable to send through the water wheels for the generation of power.

Q. 114. By Mr. Blakeslee: How is this independent supply of water for the purposes stated—domestic and otherwise—provided for in these plants which you mention?

Mr. Westall: The same objection.

A. I don't know that I know of my own personal knowledge exactly how water is provided for in these particular plants. I know of other plants that I did not have in mind in answering your former question as to how it is provided for.

Q. 115. By Mr. Blakeslee: And how is it provided for in other plants?

A. By the use of a by-pass similar to—actually installed by the Pelton Water Wheel Company.

Q. 116. And is that by-pass used for any other purpose?

A. It is used for the general purposes of regulating the amount of power generated from the water wheel, and independent of any serious modification in the velocity of water in the pipe line.

Q. 117. And in accordance or not in accordance with the Lyndon patent?

A. In exact accordance with the claims as set forth, or the specifications of the claims in the Lyndon patent.

Q. 118. When were those plants installed?

A. The particular one that I have in mind was installed during the past year or so and started up only a few months ago.

Q. 119. If such by-pass were not present in this instance what installation would be necessary to permit of such outflow of water with the gate valve shut down?

A. The only thing that I know of that could be done would be an actual waste of the water at all times.

Q. 120. And how could it be permitted to discharge?

A. It could be discharged by a waste gate at the head of the pipe line, and run by a natural channel.

Q. 121. Are you familiar at all with the operation of the electrically operated dredges?

A. Yes, sir.

Q. 122. What have you to say with respect to the load factor and fluctuations of load in such work?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. The variation of load is very great in the operation of dredges. I know particularly in my own experience with the dredgers in operation at Folsom—Gold dredgers, Oroville and general vicinity. The maximum load thrown upon the electrical transmission lines is at many times exceedingly great owing to the sticking on the buckets.

Q. 123. By Mr. Blakeslee: And that has what effect upon the speed and operation of the water wheel?

Mr. Westall: The same objection.

A. It tends to reduce the speed very suddenly and practically prevents the generators, unless they are exceedingly large as compared with the amount of load, from turning at all.

Q. 124. By Mr. Blakeslee: How does this affect the problem in such instances of governing the water wheel?

A. In my experience it means that the governing of

water wheels is practically impossible unless you have variable combination—variable opening of the water gate with a variable opening of the by-pass—the two operating and controlled by the governing mechanism, so that their relative opening and closing are inverse. In other words, the opening of the water gate occurring simultaneously with the closing of the by-pass gate, and vice versa.

January 23, 1914. A. M.

By Mr. Blakeslee:

CLCory recalled
direct examination
resumed

Q. 125. I show you an identified printed piece of paper, being Complainant's Exhibit Y, and I will ask you to examine the reverse side thereof where there are rate quotations, and to state, please, if you have ever had any experience in the calculation of electrical energy rates, and, second, if so, how these rates compare with current rates for electrical energy sold by corporations to consumers.

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. I have had experience in the proper determination of rates for electrical power and electrical service, and I have knowledge of rates for such service in a great many places on the Pacific Coast. Referring to the schedule of rates under the general heading "Rules" on the reverse side of the blank, being "Application for Lighting," to the board of public service commissioners, city of Los Angeles, Complainant's Exhibit Y, I would say that the schedule of rates there set forth is upon a basis of cost that is somewhat higher than the service charge in a number of the larger cities of which I have knowledge on the Pacific Coast, and, on the other hand,

it is about the same or perhaps a little less than rates of which I have knowledge in the smaller cities and communities on the Pacific Coast, that being on the basis of a face rate for the minimum consumptions of 9 cents per kilowatt-hour, gradually reducing to 5 cents per kilowatt-hour for all current in excess of 225 kilowatts in one month. Referring to flat rates, 2, 3 and 4—16 candle power lights, I should say that those rates are practically the same as some of which I have knowledge in the smaller communities of the Pacific Coast.

Q. 126. Are these rates which you have referred to as printed on this exhibit on the reverse side such as under usual conditions of operation and maintenance of plant and overhead charges would give a private corporation selling electrical energy at these rates a substantial profit?

Mr. Westall: Objected to as calling for evidence which can have no relevancy to any issue in this case.

A. In my judgment the rates are such as to be reasonably remunerative providing the company had a large enough business to justify the generation and distribution of a considerable amount of power. Equitable rates depend to a very considerable extent upon the amount of service rendered by any one organization, whether a private company or a municipality owned property, and, at the same time, upon the character of use of electricity.

Q. 127. By Mr. Blakeslee: Are you familiar with rates for electrical energy which consumers pay any California municipality other than the city of Los Angeles?

Mr. Westall: The same objection is repeated.

A. I am familiar with the rates charged in the city

of Alameda for service from its municipal plant; yes, sir.

Q. 128. By Mr. Blakeslee: How do those rates, approximately, compare with those under discussion?

Mr. Westall: The same objection.

A. The rates in vogue in the city of Alameda are somewhat less than these rates. I should say in general they are as much as 20 per cent less.

Q. 129. By Mr. Blakeslee: And do you know of your own knowledge as to whether or not the city of Alameda, California, is enjoying a profit upon its sale of electrical energy at the lower rates when all elements of operation, maintenance, depreciation and overhead expense or cost are taken into consideration?

Mr. Westall: The same objection is repeated.

A. According to my knowledge of the operation of the Alameda Municipal Plant for a number of years, I should say that at the lower rates there is certainly no profit. There seems to have been sufficient gross revenue to pay the expenses of operation.

Q. 130. By Mr. Blakeslee: And do those rates of the city of Alameda pay a return, to your knowledge, to the city sufficient to cover and provide for interest upon the investment in the generating plants?

Mr. Westall: The same objection.

A. In my opinion the rates are not sufficiently high to provide for proper return upon the investment.

Q. 131. By Mr. Blakeslee: What do you mean by the language "proper return?"

A. A proper return upon the investment includes interest upon the investment and a proper allowance for sinking fund for depreciation upon the various parts of the plant.

Q. 132. In other words, am I to deduce that they sell electrical energy of the city of Alameda's plants at or near the cost of production?

Mr. Westall: The same objection is repeated.

A. In my opinion those are the conditions under which the electrical energy is sold and the rates determined.

Q. 133. By Mr. Blakeslee: And if the rates for the electrical sold by the city of Alameda were 20 per cent higher, to conform substantially to the rates specified on Complainant's Exhibit Y, in your opinion and from your knowledge as to such matters would the items of interest on the investment, maintenance, depreciation and all overhead charges be provided for in the returns to the city, in addition to the base cost of the production of energy?

Mr. Westall: The same objection is repeated, and it is further objected that the witness is not shown by the record to be qualified to testify as an expert regarding the matters inquired of in the question.

A. I should say that if the rates in Alameda were, as your question indicates, namely, practically the same as those set forth on the back of Complainant's Exhibit Y, the gross revenue would certainly be sufficient to pay all of the fixed charges, including interest, depreciation and so forth, and I base my opinion upon my knowledge of the Alameda plant, having made during the past ten years not less than four reports upon its operation.

Q. 134. By Mr. Blakeslee: Were you or were you not remunerated for your services in preparing these reports?

A. I was.

Mr. Westall: Counsel for the defendant moves that the preceding testimony of the witness reciting the cost of maintenance and the amount of profit be stricken out as having been shown by his last answer that he relies on certain written reports which are not produced in evidence in this case.

Q. 135. By Mr. Blakeslee: In this connection, Mr. Cory, I will ask you if in the present instance in testifying as an expert for the complainant in this suit you are receiving any compensation or pay for such services?

A. I am not. It is not my understanding that I am to receive any compensation whatsoever.

Q. 136. Referring now to the Lyndon patent in suit and the matters concerned in your testimony of yesterday relating to sequences of energization and de-energization of the several groups of electro-magnets 15 or 16, 32, and 64, I will ask you what the effect of the governor upon the water gate through its shaft 21b will be in the governing action, assuming that the circuits through the electro-magnets 32 and 64 are broken prior to the breaking of the circuit through either group of electro-magnets 15 or 16, and that the voltage of the generator 8 has not returned to normal?

A. The effect of the governor upon the water gate under the assumption that there is no current flowing in the returning magnet 32 or the compensating magnet 64 prior to the return of the voltage of the generator 8 to normal will be that either magnet 15 or 16 will be attracting the armature 17 so that the water gate will either be in the process of being closed or open, depending upon whether the current is flowing in magnet 15 or is flowing in magnet 16.

Q. 137. And now let us assume that the normal voltage of generator 8 is further disturbed, either up or down, so that circuits are again closed through the electrical magnets 32 and 64 during the continuation of energization of either the magnets 15 or 16, what will next occur in the governing action?

A. The next action in the process of governing will be, depending upon the adjustment of contacts 45 and 46 as compared with the adjustments of contacts 103 and 104, that armature 31 will be attracted by returning magnet 32, thereby placing in operation the returning device which will ultimately open the circuit at coil 15 or 16. This action, however, of returning magnet 32 may be due to the adjustment of the contacts intermittently and not continuously. At the same time, either just a little later or just a little earlier, depending on which adjustment is desired, for the contacts 103 and 104 as compared with the contacts 45 or 46, compensating magnet 64 will attract its armature 63 and thereby place in motion through clutch 57, 58, the valve of the by-pass.

Q. 138. And, similarly, what have you to say as to the possibility of intermittent energization of electromagnets 64 and resultant intermittent action of the by-pass valve 48?

A. Magnet 64, due to the intermittent opening and closing of contacts 103 and 104, may also give to the compensating magnet 64 rapidly succeeding energizing and de-energizing which will result in intermittent rotation of the sheave 54 or not a continuous rotation, until the proper position is obtained of the valve 48 in the by-pass.

Q. 139. And under the conditions now being considered, am I to understand that these intermittent actuations of the returning device through the clutch 22, 23, and of the by-pass valve through the clutch 57, 58, may occur during a continued rotation of the shaft 20 acting to operate the water gate?

A. Yes, sir.

Q. 140. Now, when will these intermittent actions of the returning device and of the by-pass valve and constant actuation of the water gate be terminated?

A. As soon as the voltage of generator 8 has been returned to normal, due to the returning to normal of the speed of the main water wheel, as the result of the governing mechanism upon the water gate as well as upon the by-pass valve.

Q. 141. You testified yesterday somewhat as to mercury contacts provided in the circuits controlling the energization of magnets 15 and 16, the magnets 32 and the magnets 64. Can you produce any illustrative showing tending to assist in the consideration of these contact elements and their operation?

A. I think I could; yes, sir.

Q. 142. Please do so.

(The witness submits four blue prints lettered in the corners respective A, B, C and D.)

Q. 143. Will you please briefly state what these blue prints show with respect to the arrangement of these contacts and the various positions thereof relative to their making contacts, in the sequences of energization and de-energization of the groups of electro-magnets 15 or 16, 32, and 64, in line with your previous testimony?

A. Blue print A shows the contacts 40 and 40a, 41, 41a, 45, 46 and 45a and 46a, and 100 and 101, 103 and 104, all of these contacts being open.

Blue print B shows the same contacts with 41 and 41a closed and all of the rest of the contacts open.

Blue print C shows the contacts 41 and 41a closed somewhat more deeply than the contacts 41—immersed more deeply in the mercury contacts 41a—than shown upon blue print B, and also contacts 45a and 46a, 45 and 46, closed; contacts 100 and 101, 103 and 104, still being open, and, of course, contacts 40 and 40a being open because 41 and 41a are closed, the operation of the system being that either contacts 41 and 41a are closed and contacts 40 and 40a open, or, vice versa, except when the speed of the shaft of the water wheel is normal.

Blue print D shows contacts 41 and 41a still more deeply made in the mercury cups thereof, contacts 45a and 46a, 45 and 46, more deeply made than as shown in blue print C, and also contacts 100, 101, 103 and 104 also now closed; the only contacts being open, as there represented, being contacts 40 and 40a.

Referring to blue print A, none of the three magnets, namely, 15 or 16, 32 or 64, have current flowing within their coils, since the respective contacts are open.

Referring to blue print B, current will be flowing only in magnet 16, there being no current flowing in returning magnet 32 or compensating magnet 64, since the contacts are both open of these two latter magnets.

Referring to blue print C, there will be current flowing in the clutch magnet 16, in returning magnet 32, but there will be no current flowing in the coil of compensat-

ing magnet 64, since the contacts of the circuits leading to this magnet are open.

Referring to blue print D, current will be flowing in the clutch magnet 16, the returning magnet 32, and in compensating magnet 64, since the contacts are all closed controlling the current supplied to each of these three magnets.

Q. 144. Now, if in the several blue prints A to D under discussion, the lever arm 26 were so rocked that the contacts 40 and 40a were brought together instead of the contacts 41 and 41a, would or would not the same sequence of contacting conditions exist with respect to the other contact devices as you have just testified?

A. Yes, sir; the same sequence would be carried out, the only difference being that instead of contacts 41 and 41a being closed and supplying current to the clutch magnet 16, contacts 40 and 40a would be closed supplying current to clutch magnet 15.

Q. 145. Now supposing the depth of mercury in the pair of cups of the contacts 45 and 46 should be diminished and the depth of mercury in the pair of cups of the contacts 103 and 104 be increased, so that a reversal of depths as between said pairs of cups would result, referring now to the showing in the blue prints, what would be the effect with respect to the sequence of energization and de-energization through these pairs of contacts?

A. The sequence would be changed in that the current would be closed in compensating magnet 64 prior to the closing of the circuit leading to the returning magnet 32; while previously the reverse was true, namely, that current would be closed in returning magnet 32 prior

to the setting up of current due to the closing of contacts 103 and 104 in compensating magnet 64.

Q. 146. Therefore, what will be the effect upon energization with respect to the order of operation of the by-pass valve and of the returning clutch 22 and 23?

A. The increase in depth of mercury in contacts 103 and 104 will cause the by-pass valve to operate prior to the operation of the returning device acting upon the lever arm 26.

Q. 147. Now, as to the de-energization, will there or will there not be any variation from the direct order of reversal of energization consequent upon the varying depths of mercury contacts of these several contact cups?

A. No sir, the sequence of de-energization will be exactly opposite to the sequence of energizing, depending upon the adjustment of the depth of mercury in the contact cups.

Q. 148. Now as to these various parts shown in these blue prints A to D, that is, the mercury cups and their making contacts and the formation and construction thereof, such as would enter into their practical use, is there or is there not anything which is not well known in the art at the present time, and I mean in the art broadly of electricity and electro-mechanics, or was at the time of the date of the application of the Lyndon patent in suit well known in those arts, or the contrary?

A. They were well known and extensively used to my personal knowledge prior to either the application for or the granting of the patent.

Q. 149. And at the present day?

A. And at the present day; yes sir.

Q. 150. Where did you obtain these blue prints A to D?

A. They were handed to me by you a few moments ago.

Q. 151. Do you or do you not find anything in them which leads you to desire in any way to further amplify or change your previous testimony in any respect?

A. I find nothing whatsoever in them.

Mr. Blakeslee: The said four blue prints A to D are offered in evidence as Complainant's Exhibit AA, BB, CC and DD, respectively and we ask the Examiner to so mark the same.

Mr. Westall: Counsel for the defendant objects to the introduction of the blue prints referred to on the ground that they and each of them show certain parts and elements and devices which are not shown or described in the specifications or drawings of the patent in suit, and on the ground, therefore, that they are irrelevant to any issue in this case and are misleading as to the actual operation of the device shown, described and claimed in the Lyndon patent in suit.

The said exhibits are thereupon marked as Complainant's Exhibits AA, BB, CC and DD respectively by the Examiner.

Q. 152. By Mr. Blakeslee: I call your attention to the figure 6 of the Lyndon patent in suit, and I will ask you if you find therein anything which bears upon the subject of the mercury contacts which you have discussed in your previous testimony, and, particularly, with relation to the four exhibits just offered?

A. I do. Figure 6 is a representation of mercury cup contacts 40 and 40a, 41 and 41a, and 45 and 45a.

Q. 153. From your knowledge and experience as an electrical and mechanical engineer is there any doubt as to what the nature of these contacts is when taken in connection with the specifications of the Lyndon patent in suit?

A. There is no doubt whatsoever.

Q. 154. I will now show you Complainant's Exhibit E to P, inclusive, being photographs, and I will ask you if you have examined the same?

A. No; I have never seen these exhibits at all.

Q. 155. Please state in a few words your understanding of the showing of each of these photographs, taking them in the order of the designating letters?

A. Complainant's Exhibit E appears to me to be a photograph of an impulse water wheel directly connected to an electrical generator and equipped with a governor and governing device.

Exhibit F appears to me to be a photograph of various parts of a mechanism controlling the water gate and bypass valve.

Exhibit G, a photograph from another position of the water wheel and electrical generator, and the governing mechanism connected with the water wheel exhibited.

Exhibit H appears to me to be the photograph of a different water wheel directly connected to a generator and a different form of governor and governing mechanism of the water wheel.

Exhibit I is a photograph of the mechanism connection

with the operation of the water wheel having a water gate and a by-pass valve.

Exhibit J, another photograph of the same water wheel and generator as shown in Exhibit H, showing especially the water wheel governor.

Exhibit K is a photograph of a part of the same governor as shown in Exhibit J.

Exhibit L is a photograph showing especially the water wheel as shown in Exhibit J.

Exhibit M is a photograph of a power house.

Exhibit N is a detail view evidently showing the tail race and discharge from the same power house as shown in Exhibit M.

Exhibit O is a photograph of a dredger evidently working in a canal or conduit.

Exhibit P is a photograph of a hydro-electric power house.

Q. 156. I now submit to you Complainant's Exhibits U and V, and I will ask you if you can tell me what is shown in each?

A. Exhibit U is a drawing showing the mechanism connected with the operation of the water gate, the gate in this case being in the form of a needle valve, and a by-pass valve or gate, the needle valve being also the type used in the by-pass, a lever arm R connected through link Q with a crank T which is evidently capable of being rotated about shaft D by means of a crank and connecting rod in the latter, so that in the operation of the water gate it will be closed. Or in the act of being closed at the same time that the by-pass valve will be in the process of being opened, and vice versa.

Exhibit V appears to be a representation of a similar operating mechanism and water gate, the water gate valve, by-pass and by-pass valve, both the water gate valve and by-pass valve being of the needle type, so assembled that the operation of the lever arm KK about the shaft LL as a center will tend to close the water gate and at the same time act so as to open the by-pass valve, and also tend to open the water gate and at the same time close the by-pass valve, the operation of the water gate and the by-pass valve being contrarywise or inversely operative.

Q. 157. Referring to the parts on these exhibits U and V designated as oil dashpots, can you state what the functions of those parts are in these combinations?

A. The oil dashpots in both Exhibits U and V, and the springs contained within the dashpots, are evidently to prevent a too rapid operation of the by-pass valve.

Q. 158. And what do you make out as the function of the springs shown at the side of each of these dashpots?

A. The purpose of the springs, I presume, would be to tend to restore the by-pass valve to its normal position, and, at the same time, prevent too sudden shock or motion of the by-pass valve itself.

Q. 159. What do you make out is the function of the parts marked "adjusting screws" in connection with these dashpot illustrations?

A. The function of the adjusting screws is, I assume, to control the rapidity of the operation of the dashpot, or control the operation of the by-pass valve stem,

through the relation of the adjusting screws to the oil dashpot itself.

Q. 160. If the circulation of oil or other fluid in these dashpots is retarded, what will be the effect upon the responsiveness of the by-pass valve to the governing action?

A. The tendency will be to make the governing of the by-pass valve more slow or tend to retard its operation, although not at all to prevent its ultimate operation to the limits desired. It introduces what is known as the time element or delay in time in the operation of the by-pass valve. If the flow of the oil or liquid in the dashpot is retarded by the adjustment of the screws, it would tend to increase the time element required for the operation of the by-pass valve or to make it operate more slowly.

Q. 161. And do I understand that the by-pass valve is directly actuated through the dashpot?

A. No; it is not directly operated through the dashpot except by the springs, which, in Exhibit V are represented by WW, and the springs merely act as a sort of a cushion.

Q. 162. It is my understanding of your previous testimony that the springs acted to return the dashpot to normal position. Is that a correct understanding of your testimony?

A. Yes; that is what I stated in my testimony, and I am not absolutely certain upon preliminary investigation as to whether that is true or not.

Q. 163. And I further understand that the dashpot with its oil circulation affects the operation of the by-pass needle. Is that correct?

A. It affects the rapidity with which it operates.

Q. 164. Now, let us assume that the part which I have marked in pencil 2 in Exhibit V is pivotally connected at one end at the point which I mark in pencil figure 3, to the stationary by-pass nozzle, such part 2 playing through an opening in a lug which I similarly mark 4, fixed to the side of the dashpot casing, and that the springs surround this part marked 2 between the fixed lug 4 and nuts which are similarly marked 5 on the end of part marked 2. Under those conditions what will be the action of those springs? I will further qualify this question by assuming that the dashpot casing is pivoted at the point I similarly make 6, to the rearward or inner end of the by-pass valve which I similarly mark 7?

A. The tendency of the springs would be, as is often expressed, to cushion the transmission of action of the arm UUU to the by-pass valve and, in effect, would cause the transmission of such motion from UUU to be somewhat intermittent.

Q. 165. Now, let us further assume that as you draw upon the by-pass valve to move it away from its seat, the springs upon the part 2 are compressed between the lug 4 and the nuts 5. What will be the action of these springs with reference to the dashpot and the by-pass valve?

A. The action of these springs will be to transmit the motion to the dashpot, not rigidly, but to allow a certain compression of the spring before the relative motion is transmitted to the other part.

Q. 166. Now, let me point out further that I am assuming that the part 2 plays endwise through the lug

4 relatively, or that upon movement of the dashpot the lug 4 rides along the part 2, the nuts 5 being mounted upon part 2, free of anything else. What will be the action of the springs upon the dashpot and by-pass valve when the governing action ceases?

A. The action of the spring when the governing action ceases will be to retard the restoration of the by-pass valve to its former or normal position.

Q. 167. Now, I possibly should further state that the springs shown are compressed upon the movement of the by-pass valve away from its seat, when so pulled away through the dashpot. Assuming that, what will be the action of the springs upon the by-pass valve when the governing action has ceased?

A. The tendency of the springs will be to expand, overcoming their previous compression, and to move the by-pass stem in an opposite direction for a slight distance.

Q. 168. And that direction will carry the by-pass valve how with respect to closed positions?

A. I do not recall in what way you presumed the by-pass valve to be acted upon, whether it be open or closed.

Q. 169. Assume that the by-pass valve is opened through its stem and the dashpot compressing such springs?

A. Then the tendency will be for the springs to recover from their compression and to open the by-pass valve, if it was closed before.

Q. 170. I am assuming that it was first open.

A. If it is first open then the tendency will be for the springs to be restored from their compression and for

the by-pass valve, where first open, the tendency would be for it to slightly close.

Q. 171. Now, taking up again the action of the dashpot, we will assume that the piston in the dashpot is rigidly connected to the part marked UUU. If the flow of fluid in the dashpot between the spaces at opposite sides of the piston therein be retarded, what will be the result with respect to the responsiveness of the by-pass valve to pull upon the part UUU, tending to open the by-pass valve?

A. It will be retarded also.

Q. 172. Under these conditions would the by-pass valve move away from its seat quicker or slower?

A. More slowly.

Q. 173. Now, comparing the rate of motion of the by-pass valve away from its seat with the rate of motion of the part UUU, governing the first motion mentioned, will that first motion mentioned be quicker or slower when the flow of oil in the dashpot is retarded?

A. It will be slower.

Q. 174. When the flow of oil in the dashpot is retarded what will be the effect upon the movement of the piston in the dashpot?

A. The movement of the piston will be delayed; it will move more slowly with any given force applied at UUU.

Q. 175. But if the piston is on the part UUU rigidly, will it not move with the part UUU?

A. As far as the piston is concerned, yes sir.

Q. 176. And if the fluid is retarded in its flow within

the dashpot how will the speed of movement of the piston in the dashpot be affected?

A. It will not be affected at all, because the movement of the piston is controlled from the lever arm KK.

Q. 177. I mean by the speed of the movement of the piston, how will the play of the piston in the dashpot casing be affected if the flow of oil in the dashpot casing be retarded?

A. The play of the piston within the dashpot will be retarded if the flow of oil is retarded.

Q. 178. And if the piston is forced to move by the part UUU, what will be the effect upon the dashpot casing and upon the by-pass valve stem 7 connected therewith at 6?

A. The movement of the by-pass stem will be retarded by closing up or reduction of the amount of flow allowed in the dashpot cylinder.

Q. 179. If, as we assumed, the piston is moving at the same rate as the part UUU and the flow of oil is retarded in the dashpot casing so that the dashpot casing moves more nearly in step with the piston, will the by-pass valve stem 7 tend to move more nearly at the rate of the piston or the contrary?

A. The greater the flow of oil from the two sides of the piston is retarded, the more nearly will the valve stem move with the part UUU. Or, in other words, if there was no opportunity for the oil to be transferred from one side of the piston to the other, then the by-pass valve would necessarily move absolutely with UUU. On the other hand, if there was free flow of the oil from the two ends of the dashpot cylinder to either side of the piston,

then the piston would move within the cylinder through the oil and would not cause a corresponding motion of the by-pass valve stem.

Q. 180. Now, if there were nothing in the dashpot casing opposing the movement of the piston therein, or if that motion were but slightly opposed, and a sudden closing of the water gate were caused, what would be the effect upon the pipe line or upon the penstock of the water wheel to which the governor shown in plaintiff's Exhibit V was applied?

A. The effect would be to stop the flow of the water in the pipe line, and, if it were done quickly enough, it would produce very serious stresses and tend to burst the pipe line.

Q. 181. And why?

A. Because there is no opportunity for the water which is flowing at a given velocity normally to come out of the pipe line because of the closing of the water gate and because there would be no tendency to open the by-pass valve, since the piston connected with UUU would simply move within the dashpot cylinder and not transmit its motion to the by-pass valve.

Q. 182. Now, in a given hydro-electric plant where service to electrically operated dredgers is maintained, and where from water causes or by other consumptions rather extreme fluctuations in the load takes place, what would be the proper conditions to maintain as to the freedom of the piston to play within the dashpot casing?

A. Under such conditions where the load upon the water wheel is subject to very wide and sudden fluctuations the proper condition to maintain would be to retard

the motion of the oil in the dashpot tending to bring together the opening of the by-pass valve coincident with the tendency to close the water gate valve, or vice versa.

Q. 183. And in Complainant's Exhibit V how would you set the parts to this end?

A. Set the parts by the adjusting screws which would limit the rapidity with which the oil would be transferred from one side of the piston to the other—adjust them so as to retard the flow.

Q. 184. I now show you Complainant's Exhibit W and ask you if you know what it is?

A. It appears to be a part of a mechanism which I have seen and examined on a water wheel governor commonly known, I believe, as the Lombard governor, although it may be used upon governors not bearing that name.

Q. 185. Are you familiar with the operation of this device?

A. I believe that I am; yes sir.

Q. 186. I now show you Complainant's Exhibit Z and ZZ, and I will ask you if you can state briefly what each of the same shows?

A. Referring to Complainant's Exhibit Z, there is there represented a type of water wheel governor whereby the variation of speed causes a change in the position of the balls of the fly-ball governor, and the fly-balls being indicated as G-E. Connected with the stem of the fly-ball part of the governor is a rod, as I see it, marked Y-G, the vertical motion of which will control a piston within a cylinder and admit oil, water, or other suitable liquid to either side of the piston of a cylinder containing

a piston equipped with a piston rod which through suitable gear will rotate a shaft D-E. Connected with a rod Y-G is an elongated spur gear UU-J which meshes with a rack also marked UU-J. This rack is rigidly connected to the outside casing of the dashpot marked "Returning dashpot" which is equipped with adjusting screws whereby the freedom with which the oil may be transmitted in said dashpot from one side to the other of the piston within the dashpot, can be regulated. The piston of the dashpot is connected to a piston rod or stem L-E capable of receiving motion from the extended stem of the main piston within the cylinder W-G, which transmits a rotary motion to the shaft D-E. Supplementary to the returning dashpot and connected with the rack UU-J there is a spring not lettered, but the whole Exhibit V is a blue print showing component parts of a water wheel governor equipped with a controlling device, the action of the controller being affected by variation of speed, the controlling device operating to set in motion a shaft and through this shaft the operation of the water to the water gate, and in connection with a mechanism similar to Complainant's Exhibits V and U controlling the operation of the water wheel by the use of a water gate and a by-pass valve inversely operated.

ZZ is a representation of a similar type of governor, the essential difference being the arrangement of the returning dashpot which in Exhibit ZZ is automatically controlled by the use of a clutch bar which is in the shape of a pin operating within a slot ZZ in such a manner that a rapid motion transmitted from the piston stem or piston rod L-E will cause the regulation of the oil within the

dashpot to be varied, or will tend to make the oil move more freely from one side to the other of the piston. In other essentials Exhibit ZZ is substantially the same as Exhibit Z.

Q. 187. Now, when this more rapid movement or flow of oil in the dashpot in Exhibit ZZ is permitted, what would be the effect upon the movements of the rack and pinion UU-J?

A. The effect will be upon the rack UU-J that since the oil will be allowed to move more freely from one side of the piston in the dashpot to the other, the rack UU-J will be retarded to a greater degree.

Q. 188. What is the action of the spring you have referred to in this blue print with respect to the rack and pinion UU-J?

A. The act of the spring is such as to allow the rack and the pinion which is meshed therewith to move relatively to the fixed parts for a certain distance, which it could not do if it were not for the introduction of the spring.

Q. 189. What is it that causes the movement of the rack and pinion after the spring has been put under tension?

A. There would be motion transmitted through the piston in the dashpot.

Q. 190. No. I am referring to the movement after that motion, namely, after the spring has been put under tension. What is it that then causes the movement of the rack and pinion?

A. After it has been entirely extended?

Q. 191. Yes. After it has been extended as com-

pletely as the movement of the dashpot determines. In other words, what causes the movement of the rack and pinion after the first phase of movement of the dashpot in the governing action is completed? To further amplify I will say, after the dashpot has been moved through the governing mechanism to put the spring under tension, what causes the succeeding movement of the rack and pinion?

A. I don't know whether I can answer that question.

Q. 192. Well, let us get at it this way: After the governing action has pulled upon the dashpot and rack and turned the pinion in one direction, putting the spring under tension, what is the succeeding action of the spring?

Mr. Westall: Objected to as assuming that a certain action takes place that has not been testified to.

A. After the spring is entirely extended then the motion will be transmitted as if it were rigidly connected without any spring.

Q. 193. By Mr. Blakeslee: Does the spring afterwards become contracted?

A. Ultimately, yes sir.

Q. 194. And what causes its contraction?

A. The movement of the piston within the dashpot.

Q. 195. Anything else?

A. The motion of the rack itself during the period of contraction.

Q. 196. And what, if anything, occurs with respect to the pinion?

A. It rotates the pinion and that moves vertically, the vertical stem passing through the pinion.

Q. 197. And how is that caused?

A. That is caused by the rotation of that stem and the fact that it is spread at the bottom.

Q. 198. And that acts how upon the valve of the controlling mechanism?

A. It moves the valve vertically and, in fact, the controller valve of the controller thereby moves by the contraction of the spring.

Q. 199. And what effect upon the action of the controller is caused by this movement of the controller valve?

A. The position of the piston of the controller is shifted so as to affect the operation of the main gate and by-pass control.

Q. 200. In what direction relative to the first movement of the gate and by-pass valve?

A. In the opposite direction.

Q. 201. Now, when this motion of the rack and pinion under the influence of the spring takes place, does anything else move with the rack?

A. The dashpot itself.

Q. 202. And what effect upon its movement is caused by the movement of the clutch bar caused by the inclined faces of what you have called the slot ZZ?

A. The clutch bar is raised by the relative motion, and after having been raised it will allow the oil to circulate more freely from one side of the piston to the other, and if this clutch bar returns to its lowest position in the slot, then the dashpot itself will tend to move more nearly with the piston itself, and would tend to

be more rigidly connected with it, since the circulation of oil has been restricted.

Q. 203. Now, while the clutch bar is raised and a freer circulation is made in the dashpot, how about the movement of the dashpot with relation to the piston in it?

A. The dashpot can move more freely as compared with the motion of the piston than it could with the clutch bar down to its lowest position.

Q. 204. Then this variable movement of the dashpot and of the rack connected with it and of the pinion in returning under the action of the spring, causes what result with respect to the governor action after the first governing action has taken place?

A. It increases the time element of the governor action.

Q. 205. What is the purpose of this action?

A. It is to prevent the sudden closing of the by-pass after governing action has ceased. Because if the by-pass were suddenly closed it would tend to change the velocity suddenly in the pipe line, introducing serious stresses therein.

Q. 206. What I wish to determine is this: This variation of the speed of movement of the rack and pinion, causing resultantly a variation of the movement of the controller valve or piston, has what effect upon the rate of governing action?

A. It reduces the rate of governing action.

Mr. Westall: Counsel for the defendant understands that it is the plan of the complainant to have Mr. Cory testify tomorrow. Counsel for the defendant does not

waive the right to cross-examine nor his right to such cross-examination at its usual place at the close of the witness' testimony, and he wishes to now give notice to counsel for complainant that unless an opportunity is accorded to him to cross-examine both the witness Henry and the witness Cory before the expiration of the time allowed by stipulation and the order of the court, he will move to strike out the testimony of either or both of those witnesses.

Mr. Blakeslee: To clear up once and for all this matter of Mr. Henry's cross-examination and further direct examination, we call attention to the arrangement shown by the record on page 122, namely, that it was understood and agreed that the cross-examination of Mr. Henry might be made in San Francisco during the latter part of "next week", being the present week, and that he will appear for that purpose, or at such time and place "as may be hereafter agreed upon", and that complainant counsel also reserved the right to recall Mr. Henry for further examination, subject to the usual further cross-examination as to any such testimony, at any time prior to the completion of complainant's prima facie case. Now, we will stand upon that agreement as to Mr. Henry's further examination and his cross-examination, and as to any other witness, defendant's counsel may cross-examine such other witnesses immediately upon the conclusion of their direct examinations.

January 23, 1914. P. M.

292 27½ “The present witness, Mr. Cory, is excused to report for further direct examination and for cross-examination upon the conclusion of his direct examination, he to so reappear at this place on Saturday, January 24, 1914, at the hour of 2 o’clock P. M.”

GEO. J. HENRY, JR., DIRECT EXAMINATION
RESUMED

By Mr. Blakeslee:

Q. 141. Prior to the commencement of the present suit did you take any action in the direction of notifying the defendant, the City of Los Angeles, of infringement of the Lyndon patent in suit?

A. I did, by requesting my attorney to notify the city and extend them every opportunity to take cognizance of their infringement.

Q. 142. Can you produce any showing of any such notice to the city of Los Angeles, the defendant?

A. I have here before me a copy of a letter dated August 8, 1913, which, upon reading, I find to be substantially the same as a copy mailed me by my attorney on or about August 8, 1913, and which I understand was mailed to the mayor and council of the city of Los Angeles, City Hall, South Broadway, Los Angeles, California, on August 8, 1913, by Mr. Blakeslee, my attorney in this case, and which appears to be an exact copy of a letter which he forwarded to me on the same date, and the statement that he had mailed such a registered letter. And I find attached to said copy which I now hold a registry return receipt endorsed "Return to Raymond Ives Blakeslee, 728 California Building, Los Angeles," and on the back of said receipt the words "Received from Postmaster registered article original number of which appears on reverse side of this card. Date of delivery 8/9/1913, H. H. Rose, Mayor, G. M. Gallagher," and the receipt for registered mail stamped "Registered Los Angeles, California, August 8 1913," and bearing the number 65202, which number corresponds with the

original registration receipt number signed by H. H. Rose, Mayor, and bearing the post-office stamp Los Angeles, August 9, 4 P. M., 1913.

Mr. Blakeslee: The complainant offers in evidence the copy of the letter just testified to by the witness with the attached registered mail receipt and return receipt, both attached thereto, as Complainant's Exhibit EE.

Mr. Westall: Counsel for the defendant objects to the purported copy of the notice on the ground that it is no sufficient notice to the city of Los Angeles of the matters and things of which it purports to be notice.

(The said copy of letter so offered in evidence together with the attached receipts is marked by the Examiner as Complainant's Exhibit EE.)

Q. 143. By Mr. Blakeslee: Can you produce any further written evidence pertaining to the subject of the notice to the city of Los Angeles, Defendant, pertaining to the patent in suit?

A. I can, and I hand you herewith a letter signed by the secretary and appearing on a letter head of the office of Public Works, city of Los Angeles, Room 18, City Hall, dated September 4, 1913, and addressed to Raymond Ives Blakeslee, my attorney in this matter, and endorsed, "Received 9/5/13."

Q. 144. From whom did you obtain this letter?

A. This letter was handed me by my attorney with the statement that it had been received in the regular course of United States mail from the Board of Public Works.

Mr. Blakeslee: We offer the letter just produced by the witness in evidence as Complainant's Exhibit FF.

Mr. Westall: Counsel for the defendant objects to the admission in evidence of the document referred to on the ground that it is incompetent, irrelevant and immaterial and is not a sufficient acknowledgement of notice to the city of Los Angeles.

Q. 145. By Mr. Blakeslee: Referring now to the agreement of July 7, 1913, between yourself and one Lamar Lyndon which was marked for identification by the Special Examiner on January 15, 1914, and which has been copied into the record in connection with your previous testimony, describe briefly the transaction involving the execution of this agreement and the delivery to you of this instrument so marked for identification.

A. That instrument is a document signed by Mr. Lyndon and by me through my attorneys in the East who were acting for me in this matter, to consummate the sale to me of the patent in suit, being United States Letters Patent 695220 issued to Lamar Lyndon, and for the purchase of which I had been negotiating with Mr. Lyndon for some time by correspondence.

Q. 146. Have you ever met Mr. Lyndon?

A. I never have met Mr. Lyndon personally.

Q. 147. Are you familiar with Mr. Lyndon's signature as per correspondence had with him?

A. I am.

Q. 148. Does that signature upon such instrument agree with the signature as you are familiar with it?

A. It does.

Q. 149. And in what manner was the recordation of this agreement secured?

A. This instrument which also bears the attestation

of a notary public of New York County, State of New York, was forwarded by me to the United States Patent Office shortly before the 17th day of September, 1913, and recorded by the United States Patent Office on that date, as indicated by the seal of the Patent Office of the United States of America attached thereto. This recordation was done at my request.

Q. 150. And from whom did you receive the recorded document?

Mr. Westall: . Objected to as incompetent, irrelevant and immaterial.

A. And the recorded agreement was thereafter returned to me by the Patent Office, bearing said certificate of recordation.

Mr. Blakeslee: We assume that these matters speak for themselves, but as counsel seems to feel dissatisfied with anything but full proof as to the execution and recordation of this agreement, we somewhat amplify this record, perhaps unnecessarily, and for those reasons.

Mr. Westall: Counsel for the defendant denies that he has suggested anything in regard to full and exact proof, and he considers the statement just made by counsel for the complainant as entirely superfluous, the recording speaking for itself, and also suggests that any assumption made by counsel is absolutely of no relevence or pertinency to any of the matters in this case.

Mr. Blakeslee: Complainant offers in evidence the recorded agreement between Lyndon and the Complainant with the acknowledgements and certificates of recordation in the Patent Office, as Complainant's Exhibit GG, Lyndon and Henry agreement.

Mr. Westall: Counsel for the defendant objects to the admission in evidence of the document referred to on the ground that there has been no sufficient foundation laid.

(The said document so offered in evidence is marked by the Examiner as Complainant's Exhibit GG, Lyndon and Henry agreement.)

Mr. Blakeslee: Complainant also offers in evidence original United States Letters Patent to Lamar Lyndon No. 695220, marked for identification by the Special Examiner January 15, 1914, as Complainant's Exhibit HH, Lyndon patent in suit.

(The said patent so offered in evidence is marked by the Examiner as Complainant's Exhibit HH, Lyndon patent in suit.)

G. 151. By Mr. Blakeslee: Referring now to Complainant's Exhibit V, I will ask you to please describe generally the construction of the parts marked in ink UUU, WW, "Adjusting screws," and "By-pass valve stem," "By-pass valve," and "Oil dashpot OO" and the other parts marked in pencil 2, 3, 4, 5, 6 and 7, and also the inter-relation and operation of these parts, and I will ask you after you have answered the question to put into ink the said reference numerals with leading lines extending therefrom, to make a more permanent record, leaving the pencil numbers and leading lines still on the drawing.

Mr. Westall: Objected to as having been already fully covered in the previous testimony.

A. Stem UUU is connected by pivots RR and cross-head SS to one end of the double lever NN, mounted on

the shaft LL, actuated from the remaining governor mechanism through the lever KK and connecting rod II, thus causing lateral movement from the remaining governor mechanism of the rod UUU. This rod has mounted upon its end and within the oil dashpot a piston head, the dashpot being filled with oil and having an adjustable by-pass from one side to the other of said piston head. The adjustable by-pass being adjusted so as to vary the rate of flow of the oil from one end of the dashpot to the other by adjusting-screws. The dashpot is connected at point 6 with the by-pass valve stem 7, and this by-pass valve, said dashpot also carrying lug 4 against which bears the spring WW. These two springs act together in tandem, there being a loose washer between them. They are wound in opposite directions, so as to reduce lateral distortion of the spring to a minimum. Springs WW bear on the opposite end against the nut 5 carried upon the rod 2, which rod is held from lateral movement by pivots or connecting holt 3. It will thus be seen that when the oil dashpot is moved by the rod U acting against the piston head and the body of oil contained around the piston in said dashpot, it will move in a direction corresponding with the movement of UUU, and on an opening of the by-pass valve through the valve stem and oil dashpot there will be compression produced in the springs WW which will now tend to restore the by-pass to normal position, by tending to force the dashpot through its connections 6 and 7 and by-pass valve stem in a contrary direction to the movement of UUU. It will be restrained in this contrary movement by the flow of oil around the piston head through the adjustable by-pass in said dashpot, and the rate at which it will return

in a direction contrary to the movement of UUU will thus be limited by said adjusting screws. Upon its return to normal position no further oil will pass from one side of the the piston head to the other, and, consequently, no further movement of the by-pass valve will take place. I have marked the figures you have requested in ink, and lead lines as dotted ink lines.

Q. 152. Please now compare the parts just discussed with the corresponding dashpot connection features shown in Complainant's Exhibit U, pointing out, if there be such, any differences or distinctions.

Mr. Westall: Objected to as having been fully covered by the witness in his previous testimony.

A. I might say that there are no differences with the exception of the by-pass valve in Exhibit UU, as shown on the left hand side of the drawing and the connecting rod U on the right, whereas in Exhibit V the by-pass valve is shown on the right and the connecting rod UUU on the left.

Q. 153. I call your attention to Exhibit HH, being the Lyndon patent in suit, and I will ask you to please state briefly, as an addition to your previous testimony, concerning the same subject matter, the sequence of energization of the magnets 15 or 16, the magnets 32, and the magnets 64, and the sequence of resultant operations of the parts controlled thereby, and after that the sequence of such de-energizations and resultant actions on the parts controlled thereby; and in answering such question, I will ask you to state the sequences with respect both to slight variation of load upon the water wheel and more extreme variation of such load.

Mr. Westall: Objected to as having been fully covered by the witness in his previous testimony and as simply apt to fill up the record with matters which have already been thoroughly gone over.

A. I have previously testified in regard to the operation of the governing device of the Lyndon patent in suit as regards their general mode of operation. The specific operation of the several parts as regard their sequence and the relevancy of this sequence to obtaining the most successful results in commercial operation, is another matter which I have but briefly touched upon. The schematic drawing, Figure 1, of the Lyndon patent, which discloses the several devices and their manner of connection, when taken into consideration with Fig. 2, Fig. 3, Fig. 4, 5, 6 and 7, ~~which~~ disclose a governor readily adaptable to meet the varying conditions of head, power, length of pipe line and character of load, that are met with in practice. In the case of a slight changing load, where the consecutive changes are but very slight and at intervals sufficient to enable the speed to be restored to normal after each such change, as, for example, a plant supplying several thousand incandescent lights and comparatively small motor service,—would require that a governor to properly control the speed should make but slight movements of the gate upon one or several lights being turned off at a time. In such a case as this, the slight gate movement would not produce a sufficient inertia effect in the pipe lines to make necessary the introduction of returning devices or the by-passing of the water toward gate closure, and, therefore, in such a case, contacts 45, 46, 103 and 104 would not be made with contacts 45A, 46A, 100 and 101. If, however,

a complete circuit of lights were thrown off or on as, for example, when a series of arc lights in a city street was turned on in the evening and was then turned off at 2 o'clock, such a load change would call for a greater degree of shifting of the water gate influencing the flow of water to the water wheel, and in such a case as this if said load was a considerable percentage of the total load being carried by the plant, a more violent fluctuation in the water velocity would be occasioned in the pipe line supplying said water wheel unless a by-pass valve were opened during said gate closure. This effect would be very important if the pipe line were long, making still more necessary the greater degree of opening of the by-pass and to make said opening to approach more nearly to the rate of closure of the main gate. In such a case voltage variations in the dynamo 8 in the Lyndon patent Fig. 1, would be occasioned by the greater load variation, and, therefore, the speed variation of the water wheel. Said increased voltage which would cause plunger 34 to be moved to a further degree by solenoid 33, causing the lever 43 to be moved through a sufficiently greater distance to engage contacts 100 and 101 with contacts 103 and 104, causing a movement of the by-pass valve in the opposite direction to the movement being produced by the water gate, said movement of the water gate being produced in each instance of governor movement by the rotation of gears 9 and 10 through the clutch engagement of magnets 16 or 15. The by-pass will, therefore, be placed into operation in such case of more increased load. Especially would that be the case where the pipe line is a long one. In the case of a short pipe line, other things being equal, this condition of inertia would not be so

important, and in such a case it would not be necessary to shift the by-pass valve to the same degree, and contacts 45A and 46A might under such an assumed state set of conditions be caused to engage before the aforesaid contacts of the by-pass valve. We would in this case have the operation of the returning device before the operation of the by-pass valve. These relative movements of the returning device and by-pass, one anticipating or following the other, are matters of adjustment of the contacts under the general control of lever 43, such adjustments to be made as required to meet conditions in any given instance. In any case of an assumed adjusted condition of the governor to meet the aforesaid existing conditions on a given plant of pipe line length head, horse power capacity, character of load and amount of load, the diameter of pipe line, the sequence of operations that would be performed by the governor as disclosed in the Lyndon patent and drawings, would be, first, the engagement of the operating clutch through gears 9 or 10 to produce movement in the shaft 20 on the energization of magnets 16 or 15; second, the engagement, in the first assumed case, of contacts 100, 101, 103 and 104, energizing magnets 64 and producing a movement of the by-pass; third, in the same first assumed case, the making of contacts 45, 46 45A and 46A, causing the energization of magnets 32 and the operation of the returning device. The operations of the several devices, first, second and third herein mentioned, would continue for a sufficient period during which the movement of the main gates would be made to the required degree and the by-pass would be opened to the required degree and the returning mechanism would be operated to the required

degree to bring about a restoration of speed. A cycle of speed-energization will then commence and proceed in the following order: the speed of the water wheel shaft is now approaching normal. Contacts 45 and 46, 45A and 46A, have been undergoing a making and breaking action. They now are broken, and, the speed still approaching closer to normal, we have as the next step the breaking of contacts 100 and 101, 103 and 104, and the consequent de-energization of the by-pass magnet 64. The speed is still approaching more closely to normal and we now have as a final step in the governing the interrupting of contacts 40 and 40A, or 41 and 41A, as the case may be, and a complete restoration to original normal or inoperative position of plunger 34 in solenoid 33 and an interruption of governor movement.

In the second assumed case, that is, where, for example, the pipe line is shorter, and the movement of the by-pass need not be as great in proportion as in the first assumed case, and in which second assumed case the returning mechanism is set into operation at an earlier moment than is the by-pass and for less changes of load than is the by-pass, the cycle of operations that cause energizations of the magnets is as follows: on any speed change the making of contacts 40 and 40A, and 41 and 41A, the energization of the proper connected magnet for the operation of the gate shaft as previously described. Upon a greater load change contacts 45 and 45A, and 46 and 46A, would be made, introducing movement in the returning mechanism. The third step would be upon a greater load change, the making of the further contacts 100 and 101, 103 and 104, and the energization of the by-pass magnets 64 operating the by-pass in an inverse direction to the

water gate, and the governor, acting for a sufficient period of time to compensate for the variation from normal in speed and pressure, would then act automatically to bring about de-energization of the several magnets as follows: first, contacts would first be finally broken at 100, 101 and 103 and 104. Second, upon the speed still further approaching to normal, the contacts would be broken at 45 and 46, 45A and 46A, thus de-energizing returning magnet 32 and allowing the balance of the returning movement to proceed through the mechanical devices. Third, upon the gate having been shifted a sufficient degree and the returning devices having acted to complete the returning movement before the governor has "overrun," contacts 40 and 40A, or 41 and 41A, as the case may be, will be finally broken, thus arresting further movement.

Attention is directed to the fact that in the above two assumed cases, first, one in which the inertia effects in the pipe line are more serious, the by-pass is called into action at an earlier period of the governing movement and its movement proceeds to a further degree; in the second case where the returning magnets 32 are energized before the returning magnet 64, we will get a step-by-step movement of the by-pass magnet and by-pass through the associated connections, such that the total movement of the by-pass is less than in the previous case.

Q. 154. Now, please state the relation to the sequences of energization and de-energization of the electro magnets just set forth, or to any of the same, of the breaking of the circuits at 40A and 41A, causing de-energizations respectively of the magnets 15 and 16 and

termination of the governing action due to and by means of the circuit breaker, including the contacts 84, 85, 86 and 87, controlled by the rotation of shaft 20; also the relation to such sequences of the breaking of the circuit through the electro magnets 64, due to the elevation of the arm 74 in the rotation of the sheave 54, upon the shaft 20.

Mr. Westall: Counsel for the defendant objects to the question as having been fully covered in the previous examination.

A. The operation of the devices that you have just directed my attention to are for the purpose of preventing an over-traveling of the main gates and by-pass due to the rotation of shaft 20. In water wheel apparatus there is naturally a limit to which the gate can be opened or closed, and any great mechanical stress placed upon the gate or by-pass to move these members beyond the limits of their movement or stroke would result in a breakage of the parts. To prevent such breakage and arrest the governing movement at the proper moment, Mr. Lyndon has introduced circuit-opening devices in the circuits of the several magnets as stated in your question. The sequence in which these operate is that upon the water gate arriving at the end of its stroke the circuit of the magnet 15 or 16, depending on which one has been acting upon the clutch 13 to engage movement of the shafts 12 and 20, is interrupted. For example, the circuit of magnet 15 is interrupted by the movement of finger or lever 84 away from its contact point, thus breaking the circuit and de-energizing magnet 15 and preventing further movement by the disengagement of clutch 13. The magnet 16, having been producing gov-

erning movement, upon the limit of said movement being reached, finger 85 is shifted to break the circuit of said magnet 16, thus de-energizing it and preventing further movement in the same direction. Upon sheave 54 causing the by-pass to reach the end of its movement, finger or arm 74 and contact 75 are separated so as to cause the de-energization of magnet 64 and thus prevent further movement of the by-pass-operating device.

Q. 155. By Mr. Blakeslee: I now show you Complainant's Exhibit AA, BB, CC and DD (blue prints), and ask you if you have seen the same before?

A. I have.

Q. 156. Do you know who produced the same?

A. Yes, sir. These were produced under my direction in my draughting room for the purpose of more clearly illustrating the sequence of operations in the Lyndon patent in suit. I have had these drawings prepared from the Lyndon specifications, particularly from drawings Fig. 6 and 7 of the Lyndon patent, and the parts of these several blue prints bear the same identification numbers and marks as Figures 1 and 6 and 7 of said Lyndon patent.

Q. 157. I call your attention to the Lyndon patent, Fig. 1, and to the difference in the diameter between the pen-stock, or water-supply pipe 1, and the by-pass pipe 47, and I will ask you if you have anything to say with respect to these differences in diameters and the relation of such difference to the operation of the invention.

A. As I testified a few moments ago, the amount of water to be by-passed upon a gate change being effected by the governor, is dependent to a considerable degree upon the conditions surrounding the designed installa-

tion and operation of individual plants. In some plants it is necessary to by-pass a greater quantity of water than in others. That is, to maintain during the period of governor movement a rate of flow of water in the main pipe more nearly constant than in others. There are some cases where the by-pass will not have to be made to as great degree as might be indicated by the proportions in the Lyndon drawing, and there are other cases where the size of the by-pass for the proportional amount of water discharged would have to be in a greater proportion than that indicated in the Lyndon drawing. Mr. Lyndon has indicated in his specifications that the amount of water to be by-passed is a question of degree and that the by-pass should be proportioned accordingly.

Referring now to line 72 of the second page of the Lyndon patent in suit and reading therefrom, I find: "This by-pass is of an area which is a small percentage of the area of the feed gate," indicating that in the ordinary conditions of plant operation it is not necessary to have the by-pass as large or to be provided to pass the same quantity of water as will fill the main gates.

Q. 158. Are you acquainted with Mr. C. L. Cory, the witness who has testified in your behalf in this case?

A. I am.

Q. 159. How long have you known Mr. Cory?

A. Over twenty years.

Q. 160. What can you say of your own knowledge of the general reputation in the mechanical world and among mechanical and electrical engineers and teachers of mechanics, as to his ability, experience, knowledge and adjustment and training as a mechanical and electri-

cal engineer and teacher in the allied subjects, and consulting engineer in these allied subjects?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. He has a very excellent reputation and long experience in the theoretical field and a great experience in the practical field that you have mentioned.

Q. 161. By Mr. Blakeslee: How is he rated as a teacher of these subjects?

A. As among the very best, and holding a position of great importance and responsibility in the University of California.

Q. 162. In completing your testimony as far as I am now advised, I will ask you to produce, if you can, at a session to be held at this place tomorrow, a drawing or blue print ~~drawing~~ showing in diagramtic and partly structural representation the main essential parts and devices and groups of parts of the water wheel governor disclosed by the Lyndon patent in suit, as previously testified by you, and also a similar showing of the main and essential parts and features and groups of parts and elements of the governor, being the installation testified by you in the Cottonwood Power Plant, or Division Creek No. 2 power plant, or both, as you may elect, the related parts and elements and groups of elements in the structures being arranged in juxtaposition. In this connection I give notice to counsel for the defendant that I shall recall the present witness to introduce this drawing or blue print thereof and describe and identify the same, and that he shall have opportunity immediately to so cross-examine the witness as he may wish as to these subjects. As far as I

am informed, there will be no other direct examination of the present witness, and he may now proceed to cross-examine him.

CROSS-EXAMINATION.

By Mr. Westall:

Q. 163. Mr. Henry, is the consideration expressed in this purported assignment as paid by you to Mr. Lyndon for the assignment the true consideration that passed between you?

A. Yes, sir, as modified subsequently by cash in lieu of notes. I paid cash in place of the notes that are therein specified.

Q. 164. What was the total amount of the consideration paid by you for this patent?

A. The true and total consideration that was paid by me for this patent to Mr. Lyndon was \$2500, as follows: first, a payment of \$50; secondly, a payment of \$1500; and, third, a payment of \$950. The final payment of \$950 was in lieu of the two notes specified in the assignment.

Q. 165. When did you make the last payment?

A. I issued the last payment to Mr. Lyndon on July 28, 1913.

Q. 166. Has Mr. Lyndon any interest in the patent now?

A. None whatever.

Q. 167. If an accounting is decreed against the defendant in this case will Mr. Lyndon be entitled under any agreement between you and him to share in any amount which might be found due?

A. Absolutely none.

Q. 168. What is Mr. Lyndon's address now?

A. New York City, somewhere on Broadway. I can get that for you if it is a matter of importance.

Q. 169. I would like to have you give the number, if you can.

A. If I were addressing Mr. Lyndon today, I would address him at No. 60 Broadway, New York City.

Q. 170. What is Mr. Lyndon's business?

A. I understand Mr. Lyndon to be a consulting engineer.

Q. 171. How did you and Mr. Lyndon arrive at the price of \$2500 for the patent?

Mr. Blakeslee: Objected to as irrelevant, immaterial and incompetent, the amount of consideration, consideration being shown, being immaterial in any respect.

A. I inquired of Mr. Lyndon what he would take for his patent and he set the price and I paid the price.

Q. 172. By Mr. Westall: Is there any outstanding license or anything else taken into consideration in fixing the price?

A. Mr. Lyndon says not.

Q. 173. How long did you know Mr. Lyndon?

A. I have only known Mr. Lyndon by correspondence and known of him for five or six years.

Q. 174. When did you first begin negotiations for the purchase of the patent in suit?

A. I think I first wrote to Mr. Lyndon about eighteen months ago on the subject of purchasing his patent.

Q. 175. Have you instituted any other suits charging infringement of this patent?

A. I have not.

Q. 176. You testified regarding what has been known as the Lombard governor and you identified certain alleged infringing mechanism as being a Lombard governor. In your experience as an engineer do you consider a Lombard governor a good efficient form of governor device?

A. A very efficient form of governing device.

Q. 177. Do you consider it a good form for such places as the Division Creek No. 2 and Cottonwood plants?

Mr. Blakeslee: Objected to as indefinite. It is not understood what the place has to do with the governor, as the place itself which is assumed would not vary its operation aside from its combination at such places with something else.

A. The several types of Lombard governors sold by the Lombard Governor Company are adaptable to varying conditions, the principal variation being the amount of power which the different sizes will develop, and, therefore, the size and capacity of the water wheel that will be used and controlled. All the Lombard devices are well equipped with adjustable features to permit of their adjustment to adapt them to variations in local conditions within the capacity of the specific governors. I consider that the Lombard governor in the Division Creek plant and in the Cottonwood plant previously testified to are excellent devices, as far as they are utilized in combination with the nozzle apparatus, to produce the requisite governing.

Q. 178. By Mr. Westall: How long has that particular form of governor been in general use?

A. The form of Lombard governor, I believe, first

came to my attention in about 1901-2. By the "form of governor" I do not mean the exact type as used in these plants, as the form of Lombard governor used at the Division Creek plant came into use at an earlier date. But, as contained at the Division Creek plant, it has added devices which were not put into use, within my knowledge, until about the year 1902. The form of governor at the Cottonwood plant, I believe, is a design of governor of much more recent date. I doubt if either of the governors in the Division Creek No. 2 plant were designed and constructed previous to the year 1905.

Q. 179. Of the 200 water wheel governors you have testified were designed and installed by you, how many were governors of the same general type as the Lombard governor described by you as being in use at the Division Creek No. 2 and Cottonwood plants?

A. As containing the same elements of governors as Division Creek No. 2 and Cottonwood plants, I might say that most of them have contained the same elements as the Lombard governor in question.

Q. 180. Were those governors used in connection with a Doble nozzle device in any way similar to the ones you have shown in Exhibits U and V—the line drawings?

A. Not the same structural device as shown in those drawings, but a good many of them were in combination with the same elements.

Q. 181. By "the same elements," what do you mean?

A. I mean relief valves or by-pass valves actuated by the governor inversely to the movement of the water gates.

Q. 182. So that they had, you might say, the same general principle of operation as those exhibits described?

A. In many cases; yes, sir.

Q. 183. When did you ever put in a Lombard governor in connection with any such Doble nozzle device involving the same general principles?

Mr. Blakeslee: Objected to as indefinite, especially with respect to the term "Doble nozzle."

A. I should say from about four to five years ago I was first closely associated with the design and construction of water-power wheels in combination with by-pass valves actuated inversely to the water gate, such action of both the water gate and by-pass being effected through the governor. I cannot say positively that my first experience was with the governor known as the Lombard. It might have been with the Pelton types of governors. But, in any event, the devices I referred to involved the elements or principles.

Q. 184. By Mr. Westall: So that if I understand you correctly, the devices that you put in, that you have described as embodying the same general elements and type of construction, would, under your view of this construction of the Lyndon patent in suit, constitute infringements of that patent? Is that not true?

A. I believe they would. If I may be permitted to add to that answer, I may say that one of the reasons actuating me in purchasing the Lyndon patent was to protect parties who might purchase apparatus from me involving these elements, as I believed after investigation that the Lyndon patent was a valid patent and the

purchasers of apparatus from me were entitled to that protection.

Q. 185. Now, had any of the installations with which you had anything to do involved governing mechanisms substantially like the means disclosed and described in the Lyndon patent in suit?

A. I think I have already answered that question.

Q. 186. In a broad and general way you have. Perhaps I should make it more specific. Have you ever installed in the course of your engineering experience a governing device which corresponded in all details of construction to that disclosed and shown in the Lyndon patent in suit?

A. No, sir.

Q. 187. Did you ever know of anyone installing a governing device built in exact accordance with the specifications and drawings of the Lyndon patent in suit?

A. No, sir.

Q. 188. Did you ever know of the installation of a governing device employing a dynamo as shown in this patent in connection with magnets like those shown in 15 and 16, and the solenoid like that shown at 33, and also a magnet like that shown at 32 and at 64, with their connections?

A. As far as your question goes, I might say that I have seen governing devices containing the elements as you have described them. But such governing devices were not in use on water wheel apparatus. The method of using voltage variations as shown in dynamo 8 and solenoid 33 and plunger 34, actuating magnets, is, I believe, in use in various forms of electrical controlling

apparatus. And, without being able to say exactly where or when, or driving what, I have seen such apparatus. I know that I have frequently seen it.

Q. 189. But you have never seen it actually in use in the governing of the speed of a water wheel?

Mr. Blakeslee: Objected to as indefinite and as doubtful what the question means by "it."

A. No, sir; I have not.

Q. 190. By Mr. Westall: So that your explanations and exposition of the working and operation of the different parts of the patent in suit, is based rather upon theory than upon the practical experience with a device built exactly or substantially in exact accordance with that of the patent in suit?

A. Not at all. To make this matter clear, I will say that I have wound and built and operated a great many electrical devices and am thoroughly familiar with the adjustment of contacts and the making of contacts and with the several electrical elements that enter into the Lyndon apparatus. I have used magnets for producing the same movements as indicated in the Lyndon patent, drawings and specifications a sufficient number of times to be absolutely certain as regards the movements that will follow if constructed in accordance with the Lyndon drawings and specifications. And my exposition and explanation of the operations that will take place in the Lyndon patent are such as one skilled in the art who studies the Lyndon patent cannot help but arrive at in reading Mr. Lyndon's explanation and drawing.

Q. 191. That is to say, if I understand you, that your explanation taken in connection with Mr. Lyndon's explanation, will make the device clear enough for one

skilled in the art to apply the disclosures of the Lyndon patent. Is that correct?

A. My explanation taken in connection with Mr. Lyndon's disclosure, yes, sir.

Q. 192. While you are familiar with the operation of magnets and electrical connections generally, as you have described, you do not mean to say that you have ever seen a series of magnets and contacts connected up as shown in this Lyndon patent?

A. I can't say whether I ever have or have not seen a set connected up exactly as shown in the Lyndon patent, but I have seen so many magnets and solenoids operate in conjunction with contacts, that the manner in which such magnets and contacts and solenoids and dynamos would work in the Lyndon patent is easy to understand.

Q. 193. Then, if I understand you correctly, there was nothing new with Lyndon in using magnets and solenoids and a dynamo wound as described, to move certain levers?

A. I didn't say that. I said that I was perfectly familiar with it. I cannot say that I was familiar at the time of Mr. Lyndon's application or the issuance of his patent, with such devices to the same degree that I am now.

Q. 194. Were such devices in common use for other purposes at the time of the date of the Lyndon patent?

A. I know that solenoids and magnets and contacts were frequently used before such date.

Q. 195. For purposes analagous to that for which Mr. Lyndon had used them?

A. Solenoids for producing contacts; magnets responsive to energization when such contacts were made; yes, sir.

Q. 196. Then it is true that there was nothing broadly new in the adoption by Lyndon of these electrical devices to produce the results which he has produced?

A. It is true that there were mechanical equivalents of these devices and probably electrical equivalents of these several same devices at the time of Mr. Lyndon's patent.

Q. 197. Then there was really nothing broadly new in the adoption of those means to actuate levers and to make contacts? Is that true?

A. In the adoption of the magnet to produce motion as distinguished from other mechanical methods producing motion, there was nothing new. In the adoption of the solenoid to produce movement on a voltage variation there was nothing new. I believe Mr. Lyndon was new in the art in producing a voltage variation at a greater rate than the speed variation at that time for the purposes of control of the governor, and as such he accomplished a more sensitive movement of the governing means.

Q. 198. Now, in regard to the devices which you have testified that you designed or installed, what proportion of those devices employed a main nozzle equipped with a needle valve, and an auxiliary nozzle with a needle valve, said auxiliary nozzle operating as a by-pass in substantial accordance with the operation that you have described in describing line drawings U and V?

A. I believe the first devices that I have designed having a needle and by-pass nozzle actuated inversely to said needle or water gate through the agency of the governor, were two in number. There might have been four of these, but my present recollection is that there were but two, and they are the only ones that have ever been built, that I can think of at the moment, from my designs.

Q. 199. As chief engineer of the Pelton Water-Wheel Company, you had charge of installation or took a part in the work of superintending installation of how many governing devices equipped with nozzles where the valves operated inversely to each other as you have described?

A. Probably 25 or possibly 50. I take it that you mean by "installation" the design and construction?

Q. 200. Yes, sir.

A. Because "installation" means the putting in of stuff already built. I didn't do much of that.

Q. 201. What were your duties as chief engineer of the Pelton Water-Wheel Company?

A. Designing and superintending the construction of the apparatus, making up the price-list of apparatus very often.

Q. 202. Were you interested in the Pelton Water-Wheel Company in any other way than as chief engineer?

A. Yes, sir; I was a stockholder and director of the company many years and I am still a stockholder.

Q. 203. You stated that you made the first examination of the Lyndon patent four or five years ago. Upon what occasion was that examination made?

A. On the occasion of Mr. Lyndon threatening the Pelton Water-Wheel Company with a suit for infringement of the present patent No. 695220.

Q. 204. Did he ever institute that suit?

A. I don't know.

Q. 205. As one of the directors of the Pelton Water Wheel Company and as its chief engineer, what action did you take with regard to that threat of suit?

Mr. Blakeslee: Objected to as assuming an official function which is not shown to have existed in any manner.

A. It did not come within my duties to take any action.

Q. 206. By Mr. Westall: As one of the board of directors was the question of the infringement of the Lyndon patent ever taken up by your board?

A. Not that I know of.

Q. 207. So that the letter that was received by the Pelton Water Wheel Company was not taken up officially by the company but was disregarded? Is that true?

A. I don't know whether it was disregarded or not. My only connection with the matter, to make it clear, was that the Lyndon patent was referred to me and I was asked if it was such a patent as we had infringed.

Q. 208. Who referred it to you?

A. As I recollect it now, it was referred to me by Mr. Edward L. Brayton, who was at that time vice-president and manager of the Pelton Water Wheel Company.

Q. 209. And what report did you make to Mr.

Brayton in regard to the alleged infringement of the Lyndon patent?

A. I don't remember what report I made to him at the present moment, because, as my recollection exists now, it was that Mr. Lyndon threatened infringement proceedings based on some devices that he had seen or claimed that he had some knowledge of; and, as I recollect it, these were not specified with a sufficient degree of accuracy to enable me to make any intelligent deductions as to whether or not we did infringe. I gave the Lyndon patent at that time very little attention, expecting some specific instances or references which would enable me to arrive at some reasonable conclusion as to whether or not we did infringe. That, at any rate, is my present recollection.

Q. 210. You are sure that you did not recommend to the board that they take a license under the Lyndon patent at that time, are you?

A. It was not referred to me by the board. I did not make any recommendation to the Pelton Water Wheel Company or any of its officials at that time that they take a license, because I was not sufficiently posted on the alleged infringement alleged by Mr. Lyndon, to make any such report.

Q. 211. You say that you examined the Lyndon patent very thoroughly at that time?

A. No, sir; you are mistaken. I did not say that. I said that the examination that I made was a very thorough examination before I bought it.

Q. 212. Taking up the Lyndon patent in suit, I will ask you to point out and indicate the water-gate-operating shaft.

A. Shaft 20 is the water-gate-operating shaft.

Q. 213. Referring now to the drawings and illustrations of the alleged infringing structures, where do you find the water-gate-operating shaft?

A. In the Cottonwood plant apparatus the water-gate-operating shaft is shown in Exhibit E by the letter D. In Exhibit F it is shown by the letter D, ~~and in Exhibit F it is shown by the letter D,~~ and in Exhibit G it is shown by the letter D. At the Division Creek plant the water gate shaft is shown in Exhibit H, I and J by the letters LL. I might state that there are several shafts, or moveable members which might readily be called shafts interconnected. For example, in Exhibit G there is a shaft shown also across the governor. The line X might be called a water-gate-operating shaft. And in Exhibit H the shaft HH might be called a water-gate-operating-shaft. But these second shafts that I have mentioned in both cases are connected to the ones first mentioned so that movement in one produces movement in the other by well known mechanical connections.

Q. 214. What part of the patent in suit is meant by the element of Claim 1 called a "driving shaft"?

A. I would say that shaft 6 in Fig. 1 is the driving shaft.

Q. 215. Please point out and indicate where you find such an element in the alleged infringing device as shown by the drawings and photographs which you have produced?

A. I would say that shaft 6 which I have mentioned above is connected by gears to shaft 3.

Q. 216. Please read my question.

(The Examiner reads the question.)

A. Shaft carrying pulley DD in Exhibit J and in Exhibit H and Exhibit K, and carrying the pulley H in Exhibits E and G, is the mechanical equivalent.

Q. 217. Please point out in the patent in suit the reversing-clutch gear adapted to connect the water gate operating shaft to the driving shaft in reverse driving relations in the patent.

A. The mechanical equivalent?

Q. 218. No; in the patent.

A. Such reversing gear exists in the Lyndon patent, Figure 1, in the reversible clutch connecting gears 9 or 10 in mesh with gear 11.

Q. 219. Please now indicate and point out in the alleged infringing structures a reversing clutch gear adapted to connect the water gate operating shaft and the driving shaft in reverse driving relations.

A. The mechanical equivalent of such reversing gear is shown at cylinder FF in Exhibit H and J, and in the reversing cylinder W in Exhibit G.

Q. 220. Have you mentioned all the elements which you consider to be the mechanical equivalents of the reversing-clutch gear adapted to connect the water-gate-operating shaft to the driving shaft in reverse driving relations?

Mr. Blakeslee: Objected to as indefinite. Does the question mean in any part of the deposition or in the cross-examination?

A. Reversing-clutch gear is adjusted by two elements, the gears mentioned before and the clutch which sets one or the other of said gears into operation. It is therefore necessary in answering your question to show the device which sets into operation the cylinders I have

mentioned as the mechanical equivalents. These cylinders are properly the mechanical equivalents of the gears and the mechanical equivalent of the clutch which engages one or the other of these gears is the valve or controller actuated from the fly balls. This valve is not shown in the photographs for the reason that it is contained within the body of the casting and can therefore not be seen. But such valve does exist inoperative combination with said cylinder with such controlling means from the fly balls.

Q. 221. By Mr. Westall: How many parts in the alleged infringing device are contained in what you consider the mechanical equivalent of the reversing-clutch gear adapted to connect the water gate operating shaft to the driving shaft in reverse driving relations?

A. Two devices.

Q. 222. What are they?

A. I think I have already specified those two, haven't I?

Q. 223. I don't believe you have.

A. The cylinder and its connections and the controlling valve and its connections for setting the piston within the cylinder in operation. The cylinder obviously containing a piston and piston head, to produce movement in the water-gate-operating shaft.

Q. 224. You have said "cylinder and its connections." What do you mean by "connections"?

A. I mean the piston head and piston, the ports to the controlling valve, the controlling valve and its casing, and we must, of course, presume a power fluid admitted and discharged under the control of the controlling valve in one direction or the other to produce move-

ment of the piston rod in either direction, and, therefore, reversible in the said cylinders.

Q. 225. Then, if I understand you correctly, the reversing-clutch gear adapted to connect the water-gate-operating shaft to the driving shaft in reverse driving relations finds its equivalent in the two devices you first mentioned and in the different connections and parts which you mentioned in your last answer? Is that correct?

A. I do not understand that there is any discrepancy between the answers.

Q. 226. I am trying to find out all the parts taken together which you consider to represent or to be the mechanical equivalent of the reversing-clutch gear adapted to connect the water-gate-operating shaft and the driving shaft in reverse driving relations.

A. Then I must add to my answer before the last. The mechanical connections between the said piston rod and the water-gate-operating shaft indicated, for example, in Exhibit H by the rack and quadrant, mounted upon the shaft HH, the lever mounted thereon, the connecting rod II, the lever KK, mounted upon the water-gate-operating shaft LL.

Q. 227. Will you now briefly mention each and every of the parts separately that in your opinion, taken together, are the mechanical equivalent of the reversing-clutch gear.

A. In my last three answers I have gone further than specifying the elements which you have now asked, in that I have specified certain of the operating devices in connection with them. The reversing-clutch gear which you now ask me explicitly about, and exclusive of all

other elements, I will say, is contained in the power cylinder FF, for example, of Exhibit J, its piston head contained therein and piston rod extending therefrom.

Q. 228. Then, if I understand you correctly, the cylinder and cylinder head and piston and the piston rod, in your opinion, constitute the mechanical equivalent of the reversing-clutch gear adapted to connect the water-gate-operating shaft to the driving shaft in reverse driving relations. Is that correct?

A. Yes, sir.

Q. 229. Can the mechanism you have pointed out be described as connecting the water-gate-operating shaft to the driving shaft in reverse driving relations?

A. No, sir. That was not your previous question. Your question before was "adapted to connect" and now you ask me if they are connected. In order to get the connection between the reversible cylinder and the operating shaft, it is necessary to take several other steps.

Q. 230. Then can the mechanism which you have pointed out be described as adapted to connect the water-gate-operating shaft to the driving shaft in reverse driving relations?

A. Yes, sir; because the reversal of the gate operating means takes place directly through and because of the parts I have mentioned.

Q. 231. What part or parts do you understand are meant in Claim 1 of the patent in suit by "means for reversely controlling the operation of such clutch "gear"?

A. "Means for reversibly controlling such clutch gear" is a power fluid for transmitting movement to the

piston head and piston rod, a valve for controlling the flow of such power fluid to the cylinder mentioned, connections from such controlling valve to the fly balls or speed-sensitive device.

Q. 232. Do you find anything in the alleged infringing structures which you have described and stated corresponding to "a dynamo connected to be driven from the water wheel and wound to maintain constant potential for varying currents therein, but to vary the potential in a greater ratio than the speed?"

Mr. Blakeslee: Objected to as indefinite in the choice of the term "corresponding."

Mr. Westall: I am quoting the claim.

A. The fly balls are responsive to changes of speed but are not an electrical device in any other sense of the word. They perform the same function as the electrical device and in substantially the same manner.

Q. 233. Then I understand that you do not find a dynamo such as I have described, and wound in the manner in which I have described?

A. No; I find the mechanical equivalent operating the governor.

Q. 234. What is the mechanical equivalent for such a dynamo?

A. The fly balls sensitive to speed variations, and shown in many of the photographs—for instance, letter G on Exhibit E and G; letters CC in Exhibits K and H.

Q. 235. Are the fly balls alone in your opinion a mechanical equivalent of the dynamo wound as described in Claim 1, or are there other connecting devices which

must be included in order to make the fly balls the mechanical equivalent?

A. I should say they are the mechanical equivalent as they stand with the springs which separate them, and the rotating head by which they are rotated in order to cause a sensitiveness to speed. They are particularly constructed and designed to produce a considerable movement on a slight speed change and are very sensitive to speed variations.

Q. 236. Then the fly balls alone cannot be considered a mechanical equivalent, but you must take in, if I understand you correctly, the springs—

A. (Interrupting)—which separate the fly balls.

Q. 237. In what respect do the springs separate the fly balls?

A. I don't know how I could describe it other than to say that the balls are mounted upon flat steel springs which springs are rotated with the fly balls, and as the speed increases the fly balls through centrifugal force bend the springs outwardly and shift the valve rod, and as the speed reduces, the steel springs draw the fly balls in, the centrifugal force under reduced speed not being sufficient to hold the balls out under the spring tension.

Q. 238. How are the fly balls actuated or moved?

A. They are driven from a set of gears from a shaft carrying a pulley, which pulley in turn is driven from the water wheel shaft, so that the fly balls rotate at a speed directly in proportion to the speed of the water wheel shaft.

Q. 239. Then would it not be proper to include the pulley and its shaft and the connections with the fly

balls as part of the equivalent to the dynamo wound as described in Claim 1?

A. No, sir. Do you want to know why? Because the dynamo is separate and distinct from its pulley and its belt and its driving shaft, just as the fly balls are.

Q. 240. Is the shaft that extends into the dynamo a part of the dynamo in your estimation?

A. Yes, sir.

Q. 241. But, as I understand you, the shaft that operates the fly balls would not correspond as the mechanical equivalent of the shaft that operates the dynamo.

A. Yes, sir; but not with the dynamo shaft. The dynamo is operated by a pulley and belt from another shaft just as the fly balls are operated by a shaft and pair of gears. The fly balls' springs are carried on a collar which performs all the functions of the dynamo shaft, and the spindle on which the fly balls operate might be termed more nearly the mechanical equivalent of the dynamo shaft than any other portion of the fly ball mechanism.

Q. 242. Do you find in any of the alleged infringing structures as illustrated by the photographs and drawings which you have produced, an electro-magnetic device connected to such dynamo, and controlling the clutch-gear-controlling means?

A. No, sir.

Q. 243. You don't find any such element?

A. I find such an element, but no such electro-magnetic element. The mechanical equivalent in the alleged infringing structures I find in the connections between the fly balls for transmitting movement to and making

sensitive to speed changes the controller or valve which puts into reversible movement the piston head and piston of the cylinder previously testified to and, as such, forming a reversing-clutch means, and, therefore, the mechanical equivalent of the devices you have mentioned in the Lyndon patent.

Q. 244. If I understand you correctly, you consider the electro-magnetic device connected to such dynamo, and controlling the clutch-gear-controlling means, finds its equivalent in the connections of the fly balls.

A. No, sir; in the valve actuated from the fly balls through suitable connections.

Q. 245. Will you please point out each and every part which you conceive to be taken together to constitute the mechanical equivalent of the electro-magnetic device connected to such dynamo, and controlling the clutch-gear-controlling means.

A. I consider the element marked "controller" on Exhibit ZZ said equivalent.

Q. 246. And what would you include in the controller

A. The valve which is marked "controller," as stated in my previous answer, and its casing, and parts surrounding it, in co-operation with which it moves.

Q. 247. Where, if at all, do you find in said alleged infringing device means for resisting the action of said electro-magnetic device in such manner, that at normal speed the clutch mechanism will be disengaged, but on increase or decrease from normal speed the clutch will be operated to govern the water-gate through its operating shaft.

A. Such device is indicated in ZZ by the vertical con-

necting rod between the fly balls and screw threads on the valve stem, which rod is indicated in its lower portion by Y-G and forms the valve stem.

Q. 248. Please indicate by reference to the drawings of the patent in suit what part you believe is meant by "electro-magnetic means controlling such clutch gear" as used in Claim 2.

A. The electro-magnetic means controlling the clutch gear in the Lyndon patent, I should say, is the solenoid 33.

Q. 249. If you find such an element in the alleged infringing devices, please point it out.

A. As I have previously pointed out, I consider the element marked "controller", and which I now mark with red pencil "controller" on Exhibit ZZ.

Q. 250. Will you point out the part which you have marked in response to the last question in the photographs of the alleged infringing structure?

A. As I have previously testified, the controlling value which is the equivalent means is inclosed within the governor structure or castings and, therefore, cannot be seen in the photographs. The approximate location of said controller is, in Exhibit J, indicated by the letters EE; in Exhibit G at a point slightly below Y. The valve stem being shown clearly just above Y which actuates this controller.

Q. 251. Do you find in any of the alleged infringing structures a dynamo wound so as to deliver an electromotive force varying in a greater ratio than the speed of the water wheel?

A. No sir.

Q. 252. Will you find what you consider the mechanical equivalent of that dynamo?

A. Yes, sir. The fly balls, as previously testified.

Q. 253. Do you find in the infringing structure a solenoid that connects it to said dynamo, and, if so, where?

A. No, sir; but I find the machanical equivalent in the controller, so labeled on Exhibit ZZ.

Q. 254. Do you find in any of the alleged infringing structures a device controlled by said solenoid and carrying a contact device, and energizing connections for the electro-magnetic gear-controlling means, controlled by said contact device?

A. I do not find a solenoid, but, as previously testified, its mechanical equivalent is the controller, as labeled on Exhibit ZZ. The electrical connections and current flowing in them are directly comparable to the pipe connections or parts to the water-gate-operating means and the power fluid engaged in the action of the controller for the purpose of shifting the piston head and piston rod in the said operating cylinder.

Q. 255. Will you please briefly mention all the parts that you conceive to be the mechanical equivalent of a device controlled by said solenoid and carrying a contact device, and energizing connections for the electro-magnetic gear-controlling means.

A. I have mentioned them in my last answer, which I now repeat.

Q. 256. Taking up Claim 3 of the patent in suit, please mention briefly and indicate by the reference letters heretofore employed or any other marks, if neces-

sary, without, however, endeavoring to explain their operative connections and relations, the parts in the alleged infringing structures which you conceive to be covered by the part of Claim 3 reading "a water-gate-operating shaft, and means for operating same in either direction to govern the water-wheel".

Mr. Blakeslee: This question is objected to as calling for a mere repetition of the testimony given by the witness upon direct examination and counsel is referred to his answer in that respect.

A. Referring to Exhibit ZZ, I have marked in red pencil "water-gate-operating shaft", and I have marked thereon "means for operating same in either direction to govern the water wheel."

Q. 257. The claim also calls for a controller for said operating means responsive to changes of speed of the water wheel. Where, if at all, do you find that element in the infringing device?

A. I have marked "controller" in red pencil, during one of my previous answers, and I now write thereunder the words "responsive to changes of speed of the water-wheel" on Exhibit ZZ.

Q. 258. Please point out and briefly indicate the part or parts in the alleged infringing device which in your opinion are the mechanical equivalent of a returning device for said controller provided with a clutch connection to said operating shaft.

A. I have marked in red pencil on Exhibit ZZ "the returning device for said controller provided with a clutch connection to said operating shaft," and have pointed with an arrow to said clutch means.

Q. 259. Will you please elucidate a little more fully what parts you intend to be taken in by the arrow which you conceive to be the equivalent of the clutch?

A. A clutch is a device for picking up or interrupting or intermittently transmitting movement between two members. This is exactly the function performed by the dashpot.

Q. 260. If I understood you correctly, then the clutch includes the dashpot with its piston and rod and other connections. Is that true?

A. Yes, sir.

Q. 261. What other connections are there besides the piston and rod?

A. There is a pin and a connection to the rack and pinion of the returning device and through said pinion to the screw threads shown at the upper portion of the valve stem and within the fly ball element.

Q. 262. Do I understand you to add the parts that you have just mentioned to your previous answer as being part of the devices which are equivalent to the clutch?

A. No, sir. You asked me what parts were connected to the clutch, I understood.

Q. 263. In a previous question, if I understood you correctly, you stated that in your opinion the clutch found its equivalent in the dashpot, the piston, the piston rod and certain connections. What connections?

A. The connections from the piston rod that are shown clearly in the drawing and extend all the way down to the water-gate-operating shaft, the main operating piston and the connection from the clutch to the

same means that the clutch sets into operation as, for example, the connection between the piston rod and the rack.

Q. 264. I am asking you what you consider is the mechanical equivalent of the clutch only.

A. I cannot consider a clutch without considering the clutch connected with something to do something. The clutch alone, if we could eliminate all else, would consist of the piston and piston head and cylinder within which the piston operates, and the body of fluid therein contained.

Q. 265. What is commonly understood by a "clutch?"

Mr. Blakeslee: Objected to as calling for a repetition of recent testimony.

A. I believe I gave that.

Q. 266. By Mr. Westall: Do you find in the alleged infringing structures "means actuated by said controller on movement thereof from normal position to engage said clutch with said shaft"?

Mr. Blakeslee: This question is objected to as further calling for mere repetition of the previous testimony of the witness, and objection is made to padding the record with such repetitious testimony.

Mr. Westall: Counsel for the defendant calls attention to the fact that this claim is alleged to be infringed, and that the witness has testified that the alleged infringing structures are an infringement of it. I am only asking him to point out where he finds the particular elements mentioned.

Mr. Blakeslee: And he has so pointed out.

A. Yes, sir; I find such means in the parts I have circled with a red pencil, and, as referring to it, I have written on Exhibit ZZ the words "means actuated by said controller on movement thereof from normal position to engage said clutch with said shaft, so as to cause the return of the controller to normal position and interrupt the governing action before it has over-run the proper amount."

Q. 267. Please indicate upon the alleged infringing devices as shown in the illustrations what you conceive to be the controller mentioned in Claim 3.

Mr. Blakeslee: Objected to as calling a third time for the same testimony which the witness has already given.

Mr. Westall: Counsel for the defendant states that this question is in reference to another claim where the word "controller" might possibly have a different meaning, and it is in reference to the language of this claim that the question is repeated.

Mr. Blakeslee: Well, if counsel wishes to differentiate between the meaning of the word "controller" as used in one claim and the meaning of the word "controller" as used in another claim, or to try to so differentiate, or have the witness so differentiate, let him specify the claims or specify the relation of such word "controller" to something else in some manner so that such differentiation may be understood or made possible.

Mr. Westall: Counsel does not wish to differentiate in any way in asking for the testimony of the witness who will do the differentiation if there is any differentiating to be done.

Mr. Blakeslee: We object to the repetition of ques-

tions concerning the location or embodiment of parts defined by the same language after such location or embodiment had been once pointed out, as being a mere idle waste of space in the record and of the time of counsel for complainant, and as serving no useful purpose, and as amounting to exhaustive cross-examination.

A. I have already so marked the controller "controller" on Exhibit ZZ.

Q. 268. By Mr. Westall: Will you please look at Claim 4 of the patent in suit and state whether or not the elements there mentioned find their equivalents in the parts you have previously pointed out in response to the prior questions concerning those other claims.

Mr. Blakeslee: Objected to as indefinite and vague and calling for testimony comparing a thing with itself and in effect calling for testimony which has already been given. There must be some definite standard of comparison before such question is proper. The question is further objected to as entirely too general to permit of a specific answer and as possibly leading the witness into a maze in which he will never be able to determine whether or not he has passed through it, and each and every other objection previously made is addressed to this question.

A. Are you referring to questions I have replied to in cross-examination only?

Q. 269. I am. I will state that I am merely endeavoring to shorten the proceedings by having you testify that the elements previously pointed out are—

A. I believe the elements I have previously pointed out in connection with Claim 3 and described and writ-

ten in red pencil upon Exhibit ZZ, as previously testified to, are the elements contained in Claim 4 with the difference that actuating means controlled by said controlling means to return the controller to inoperative position so as to prevent excessive movement of the governor, being the latter portion of said Claim 4, might for the sake of clarity be better described as the spring and finger parts acting against the rack, and (which spring and finger parts I have marked "actuating means Claim 4.")

Q. 270. Do you find in any of the alleged infringing devices a reversing clutch gear adapted to connecting a water-gate-operating shaft and a driving shaft so as to cause the water-gate-operating shaft to move in either direction?

Mr. Blakeslee: Objected to as calling for another repetition of testimony previously given by the witness.

Mr. Westall: Counsel for the defendant calls attention to the fact that each claim is slightly differently worded and we are following the language of each claim.

A. Yes, sir. Referring to Exhibit ZZ and to Claim 5 of the Lyndon patent, I find the water-gate-operating shaft which I have numbered 1 in red pencil, a driving shaft which I have marked "driving shaft", a reversing clutch gear which I have marked 2, and lettered as indicated in Claim 3, which is adapted to connect said shafts so as to cause the water-gate-operating shaft to move in either direction. There is here a departure from the structure alleged to infringe in that the inter-connecting parts—while movement is brought about from the driving shaft to the water-gate-operating shaft through

the instrumentality of the reversing cylinder and piston, the equivalent of the reversing-clutch gear,—the said connections are numerous and the movement from the driving shaft to the water-gate-operating shaft, while actually brought about by said reversing means, is not as clearly defined as in the other claims.

Q. 271. Do you find in said alleged infringing device a “dynamo operatively connected to produce an electro-motive force responsive to the speed of the water wheel”?

Mr. Blakeslee: The question is objected to as calling for a repetition of testimony previously given. And counsel’s attention is called to the fact that the witness has testified that in no part of the infringing structures does he find or has he found a dynamo, irrespective of its qualifications as in this claim or in any other part of the patent.

Mr. Westall: I think the witness will understand that when I ask if he finds such an element that I am intending that he shall state whether or not he finds the mechanical equivalent of said device.

Mr. Blakeslee: If the witness is desired to point out mechanical equivalents, it is easy to frame a question to that end.

A. I do not find such a dynamo. Its mechanical equivalent, as previously testified, is an element in the infringing device responsive to speed changes and consisting of fly balls and their immediate associated parts.

Q. 272. By Mr. Westall: Do you find a solenoid device energized by said dynamo, a core for such solenoid, a circuit controller actuated thereby, springs for holding

the circuit controller in normal position, two electromagnetic devices for reversely operating the reversing clutch gear?

Mr. Blakeslee: The same objection.

A. I do not find these electrical elements or electrically operated elements, but I find their mechanical equivalent in the parts previously testified to.

Q. 273. By Mr. Westall: Do you find a returning device adapted, when operated, to return the circuit controller to normal position?

A. I do.

Q. 274. Please indicate where.

A. The returning device is indicated as element 3 in red pencil and marked "returning device," etc. on Exhibit ZZ.

Q. 275. Is that adapted, when operated, to return the circuit controller to normal position?

Mr. Blakeslee: Objected to as repetition of the previous question.

A. Yes, sir; in the sense that "circuit controller" here is a controller marked "controller" in that it controls the circuit of oil as distinguished from an electric circuit.

Q. 276. By Mr. Westall: Do you find a clutch adapted to bring said returning device into operative connection with the water-gate-operating shaft?

A. I do, and have marked such as "means actuated by said controller", etc., in the Exhibit ZZ.

O. 277. Do you find a magnet controlling said clutch?

A. No, sir; but I find its mechanical equivalent in the

means for operating the valves which I have circled with red pencil on Exhibit ZZ.

Q. 278. Do you find a circuit for said magnet including a circuit closer?

A. No, but I find the mechanical equivalent in the mechanical connections which might be termed a circuit of mechanical connections, and which set into operation and cause the movement of the valve circled with red pencil for the purpose of varying the rate of flow in the oil cylinder or clutch.

Q. 279. Will you mention specifically the parts that you conceive to be the mechanical equivalent of the circuit for said magnet?

A. I have marked the parts which I consider the mechanical equivalent of the word "circuit", with the words "Mechanical circuit on Claim 5."

Q. 280. Do you find a circuit closer or its mechanical equivalent in the circuit that you have pointed out?

A. No, sir. The mechanical equivalent of the electric circuit closer is the movement produced upon a movement of the "mechanical circuit" which sets into movement the valve which has been circled with red pencil.

Q. 281. You find a specific part of the mechanism which you would call a circuit closer, or which you would indicate as the mechanical equivalent of the circuit closer, do you?

A. Yes; I certainly do, because the Lyndon patent in the circuit which is closed to produce the movement now under discussion, is the movement which sets up the operation or starts the train of mechanical movements which cause the operation of the clutch. Such move-

ments are set up and started very distinctly in the present case by the movements of the part marked "mechanical circuit Claim 5", and the parts marked "actuating means Claim 4".

Q. 282. Would you mention specifically just which part of the devices you mention that you would say is the equivalent of the circuit closer?

A. The circuit closer is a lever which swings and the parts marked "mechanical circuit Claim 5" are levers and rods which swing, and, as such, they perform the same function and in the same manner, in that they bring about the setting into operation at the clutch at a variable rate of speed through the valve circled with red pencil.

Q. 283. Then, if I understood you correctly, the mechanical circuit which you have pointed out embraces a circuit closer which consists of the same elements which you have pointed out as forming the circuit? Is that correct?

A. Yes, sir; the mechanical circuit consists of the devices which cause the closing and setting into movement of the mechanical circuit.

Q. 284. Then the circuit of said magnet and the circuit closer are identical in the mechanical means which you have pointed out?

Mr. Blakeslee: The witness is being asked as to the terms of Claim 5, as I understand it, and that claim distinctly calls for "a circuit for said magnet, including a circuit closer." This last question is objected to as tending to mislead the witness upon the very matters that are set before him in the inquiry.

A. They are, to this degree: that the circuit of said magnets in the Lyndon patent is a train of metal or wire or rods or electrical conductors. The circuit closer is a swinging arm. The mechanical circuit that I have mentioned as the equivalent of the circuit and of the circuit closer is a series of metal rods and levers and connections to produce the same results, although in a slightly different way.

Q. 285. By Mr. Westall: Then you cannot point out any particular part of the mechanical circuit which you have mentioned, as being the mechanical equivalent of the circuit closer?

A. No better than I have already done in my previous answers.

Q. 286. Is the circuit closer which is included in the circuit pointed out by you operatively connected with the circuit controller and adapted to energize the magnet on movement of the circuit controller in either direction?

A. As previously testified, there is no magnet or electrically operated device in the alleged infringing apparatus governing mechanism.

Q. 287. Is there any mechanical equivalent in the alleged infringing devices of the circuit controller adapted to energize the magnet or movement of the circuit controller in either direction?

A. Yes, sir; the means which I have marked "mechanical circuit, Claim 5" on Exhibit ZZ is adapted to set into movement the clutch device whenever movement occurs in the means for reversible operation of the gate shaft.

January 24, 1914, A. M.

Mr. Blakeslee: Counsel for defendant having as yet not performed, complied with or responded with respect to the notice and demand heretofore given on the record to produce and submit to complainant all its papers, maps, specifications, blue prints, records and other things pertinent to and disclosing the inter-relation and operation of the hydro-electric plants of the defendant in Inyo County, California, known as and referred to in these proceedings as the Cottonwood Plant and Division Creek No. 2 plant; and there having similiarly been no response to or compliance with the notice and demand similarly heretofore given to open to the inspection of complainant and facilitate the examination and inspection of the hydro-electric plants, just mentioned,—all for the purpose of getting before this court in as concise, complete and satisfactory a manner as possible the issues involved in this suit as certainly most fully developed by the testimony taken to date concerning said mentioned plants,—we now give counsel for defendant here present notice of a motion to be presented at the court room of this court, in the Post Office Building, in Los Angeles, California, at the hour of 10:30 o'clock A. M. of January 29, 1914, for an order commanding the defendant to produce for the purposes above mentioned all books, records, specifications, drawings, blue prints and other things hereinbefore upon the record enumerated in this respect, for the purpose of shaping, defining and proving the issues in this suit; and for a further order permitting complainant to fully examine and inspect the enumerated plants and the parts and details thereof,

both at rest and in motion and under and by the assistance of those habitually in charge of and fully versed in the construction and operation thereof.

And we further give counsel for the defendant here present notice as of the same hour, day and place, of a motion for an order extending the time for complainant to complete his *prima facie* proofs herein, for a period of ten days from and after the date of the expiration of the time within which the complainant herein under present stipulation is to complete his *prima facie* case.

The said motions to be presented to the Honorable Judge of this court at the time herein specified, to be then and there heard or as soon thereafter heard as the Honorable Judge of the court may direct or find convenient and practicable, either in open court or in chambers.

Mr. Westall: Counsel for the defendant denies that there has been any demand thus far made for an inspection of the plants referred to by counsel, and insists that the demand heretofore made for the production of certain blue prints, papers, records, etc., has been vague and indefinite, and plainly shows upon its face that compliance with any such demand would result in putting into this record a large amount of evidence which could not be otherwise than entirely irrelevant to any issue in this case.

Mr. Blakeslee: It is further noted that defendant through present counsel, quite contrary to the attitude of counsel heretofore in the case for defendant, has not volunteered or offered to comply with the definite and clear demands heretofore made in any respect whatsoever, and has not at any time adverted to such demand

nor proffered any assistance in enabling the inspection of the plans, specifications, drawings, blue prints and other records and things demanded, even in spite of the communication directed to present counsel by the office of the city attorney of the defendant sent to present counsel as an act in good faith with respect to the understandings between complainant and defendant while the city attorney's office and counsel Lyon were handling the defense of this case. And we specifically charge the defendant through its present counsel with a lack of that good faith and reasonable dealing as between parties which in a court of equity, of all courts, is to be expected as among practitioners, and usually is found.

Mr. Westall: Counsel for the defendant states that he does not understand his function as the representative of defendant places upon him any duty to volunteer or to offer assistance to complainant in any way in making out his case. Counsel for the defendant also states that no request or demand except indirectly has been made of him for an inspection of the plants, as the records will show, but it has been assumed constantly by counsel for the complainant that there was objection to inspection or to production of proper evidence vital to the issues of this case on the part of counsel for the defendant, which, it is submitted, the record clearly shows is not the case. Whenever a demand or a request is made in proper form for something definite, counsel for the defendant will certainly put no obstacles in the way of the production of evidence which is pertinent or material to the present inquiry. But the defendant certainly does object to the filling of the record with a large mass of

matter which can have no pertinency to the issues herein involved.

insert Mr. Blakeslee: We stand on the record which speaks fully as to the demands under consideration.

Q. 288 Mr. Henry, what do you understand by the term "water gate"?

A. A valve for controlling the discharge of water.

Q. 289 Then the valve controlled by the by-pass of the patent in suit is a water gate under that definition?

A. It is also a water gate by that definition. The same is true of the by-pass valve in the Lyndon patent under this definition. The definition is a broad one.

Q. 290 It would also include, would it not, the needle valves you have described and as shown in the Exhibits line drawings U₁ and V, would it not?

A. They might be so termed.

Q. 291 You say they might be so termed. Would you say that they could properly be so termed?

A. They could properly be so termed, but are not so termed is the Lyndon patent, at Mr. Lyndon distinguishes between the two devices, both of which might properly be called water gates under the definition I have just given you. His object in distinguishing between the two devices is fully set forth in the patent.

Q. 292 You would consider the main nozzle with its needle properly referred to as a water gate, would you not?

A. I would consider that that might be one way

346 4 add line 41½ “Geo. J. Henry was thereupon
recalled and his cross examination resumed.
Cross examination (resumed). By Mr.
Westall”

of properly describing a nozzle, with its needle, although it is a little broad, as a needle and nozzle are a specific type of water gate. The word "water gate" is almost generic as a different definition of a large variety of devices performing the functions of controlling the flow of water.

Q. 293 Do you consider the by-pass valve of the patent in suit finds its mechanical equivalent in the needle valve described by you and shown in the line drawings U and V?

A. By the needle valve in Exhibits U and V described as by-pass valves or by-pass needle valves.

Q. 294 When you use the words "inverse operation of the by-pass valve and the water gate" as applied to the device shown in the line drawings U and V, do you mean the same thing that you do when you speak of the inverse operation of the by-pass valve and water gate of the patent in suit?

A. I do, with the following limitations: that during governor movement the same action takes place, and that subsequent to movement of the governor mechanism the by-pass valve in the Lyndon patent is broadly described as taking up a normal position. Normal position means the position which it is set for the by-pass valve to occupy to prevent inertia effects that would be encountered in the governing and control of the plant. It is obvious that normal position may, therefore, be a different point in different installations due to variable factors which enter into the consideration in each case. Mr. Lyndon has given and described clearly one case and has also

shown clearly the advantages to be derived in all cases, and the adjustable possibilities which are perfectly apparent to one familiar with the art at the time of his invention.

Q. 295 If I understand the testimony by you on direct examination, your idea of the operation of the by-pass valve and the water gate of the Lyndon patent in suit is that every slight variation in load or in speed of the water wheel causes a movement of some kind of the water gate and an inverse movement of the by-pass valve.

A. No, sir; you are not correct.

Q. 296 Do I understand you to say that an increase or decrease in the load of the main shaft would not result in a movement of the by-pass valve and water gate of the Lyndon patent in suit?

A. If the movement of the water gate was slight the Lyndon apparatus would be adjusted so that no movement of the by-pass would occur. Mr. Lyndon distinctly states that the by-pass valve and the by-pass are for the purpose of preventing inertia effects damaging to the governor control.

Q. 297 So that you concede that Mr. Lyndon contemplated an adjustment of his device which would permit the water gate to be moved without a corresponding inverse movement of the by-pass valve under certain conditions?

A. That is correct.

Q. 298 Where in the Lyndon patent in suit do you find any suggestion that Mr. Lyndon had in mind an adjustment which would permit the movement of

the main water gate without any corresponding movement of the by-pass valve?

A. I find no direct statement by Mr. Lyndon to that effect. Mr. Lyndon is adding something to the art that will take care of a condition not previously taken care of in a satisfactory manner on turbine water wheels, and as such he describes its functions and means of operation and various elements for the purpose of accomplishing such ^acondition. It does not follow therefrom that his governor is inoperative under those conditions which do not call for such elimination of damaging inertia effects, and he would unnecessarily hamper the record if he attempted to inject into his patent application devices so familiar and well known and means of regulating and adjusting devices so familiarly and well known in the art that anyone even partially skilled in the art as it existed at the time of his patent would be familiar with without half thinking.

Q. 299 Referring to the line drawings, Exhibits U and V, please state what you conceive to be the normal position with respect to being open or closed of the by-pass valve water gate?

A. The by-pass water gate in the case of Exhibit U I should consider to be closed normally during periods of governor inoperation. That is, after the governor has operated, the by-pass in Exhibit U, and at the Cottonwood plant is permitted under the action of the dashpot and dashpot springs and water pressure against the needle valve to resume practically complete closure. This, you will note, is at the end

and after the governing takes place,—after the governor action has ceased. During the periods of governor movement involving water gate movement for controlling water to ^{the} water wheel, such that they are are to a material degree apt to, and would, without use of the by-pass, produce damaging inertia effects to the pipe, the by-pass is off of its seat, to a greater or less degree; and during periods of movement backwards and forward of the water gate while such considerable load change, and, therefore, speed change, is occurring, we have the by-pass valve operating inversely to the water gate in both directions. For example, in Exhibits U—and I might say the same testimony applies to Exhibit V throughout this answer —if a dredger bucket is plunged into the earth we have a considerable opening taking place at the water gate to admit a greater quantity of water onto the water wheel to meet the increased load. The water gate in such a case is open to a greater degree than that necessary to maintain the dredger bucket added load after it has once brought the wheel back to speed. The first operation is, therefore, an opening of the water gate and practically no movement of the by-pass valve as the head is great on the pipe line and the water responds under the action of gravity as quickly as the governor moves the gate into opening direction. There is, therefore, no necessity for having had the by-pass open before this initial movement. We now have the main water gate open to a large degree, the speed of the apparatus now being in the act of being built up, the dredger motor get-

ting up its speed. As the dredger motor approaches its speed, it requires less power. The water gate is therefore caused to move in a closing direction through the action of the speed-sensitive means and controller, and while it is moving in its closing direction the by-pass is pulled off of its seat, being the inverse movement to that of the water gate, and for the purpose of preventing the inertia effect or water-ram in the main pipe line. It is now performing the exact function described and specified and claimed by Mr. Lyndon; and as the dredge motor arrives at its correct speed and the shovelful of dirt, or chain of buckets (if it be of the latter type) begin to ascend, we have the load again increasing and the water gate moving in an outward direction, and synchronously with such movement the by-pass moving in a closing direction inverse to the water gate, being the exact movement that takes place and is described by Mr. Lyndon, and hence we have through the cycle of operations above mentioned which are not only commonly met with in practice but met with a great many times in a day and during operation of the load of the dredgers on the aqueduct plants must have been met with many times in an hour, exactly as described by Mr. Lyndon, namely, the water gate controlling the flow of water to the water wheel, moving in a closing direction and the by-pass opening, and vice versa, the water gate opening and the by-pass closing synchronously therewith during the action of the governing, to prevent inertia effects. The cycle of operations which I have here described

take place within a very few seconds of time and long before the by-pass has been moved to a material degree in its closing direction under the action of its oil dashpot and springs. In such a plant as the Cottonwood plant and Division Creek No. 2 plant the by-pass dashpot would be adjusted so that it would probably take not less than a minute or a minute and a half to move through its full closing stroke; and it is therefore evident that during such a cycle of changes as above mentioned the by-pass valve cannot arrive back at its seat in a wholly closed position until some time after the governor movement of the water gate and by-pass has taken place. If the oil dashpot be so adjusted by the adjusting screws thereon so that the port of the oil by-passing around the piston head, as previously testified to, is rapid, so that the dashpot would permit the by-pass valve to make its full stroke in a period of probably less than one minute, we would have an inertia effect in the pipe line supplying the water wheel which would be dangerously high for the safety of the pipe or, at least, defectively high as regards the governing during the critical cycle above specified.

Mr. Blakeslee: In connection with the notice of motion given at the commencement of the present session for taking testimony this morning, I will ask the Special Examiner to certify to the court the record in this case up to and prior to the commencement of today's session and to so certify such portion of the record prior to the morning of January 29, 1914.

Q. 300 By Mr. Westall: If the load carried by

the main shaft is increased, will there be a movement of the by-pass valve in the alleged infringing devices? You can answer the question by yes or no.

Mr. Blakeslee: Objected to as indefinite and incomplete and so broad as to be impossible of a careful and accurate negative or affirmative answer without qualification.

A. Yes; if the movement you speak of takes place during the time that the governor has been acting to correct or a material load change. No, if you mean the entire apparatus has been at rest previously and the action that first takes place on governor movement is as you have described.

Q. 301 By Mr. Westall: And an increase then in the load carried by the main shaft would not always be followed by any movement of the by-pass valve? Is that correct?

A. It is true that it would not always be at the Cottonwood plant. At the Division Creek plant at the time I saw it the by-pass was partially open, and in such case there would be a movement in the closing direction of the by-pass. To summarize, I will say this: In Exhibits U and V if the by-pass valve has occupied a closed position previous to the movement that you ask me about, and the water gate opens, there would under such a condition be no movement in the reverse direction of the by-pass valve. Exactly the same as in the Lyndon apparatus, if the by-pass valve were adjusted so that the weights 69 in dashpot 70 brought the valve 48 back to a closed position, there would then upon the

opening of the gates through the agency of the shaft 20 be no further movement in a closing direction of said by-pass valve 48.

Q. 302 The normal position of the by-pass valve as shown and described in the Lyndon patent is a half-closed position, isn't it?

A. In some places it is mentioned that that would be the position of the by-pass valve; but that must be taken into consideration in connection with Mr. Lyndon's other statement that the governor as herein described is for the purpose of preventing inertia effects in both directions. That is, during opening movement and during closing movement. In the case that you are now asking me about, we have to deal primarily with the inertia effect during the retarding of the water, and the head in these cases is high enough so that we do not have to concern ourselves to any considerable degree with the acceleration of water in the pipe line during an opening movement of the gate valves, as, under the high head, the water gets up to speed in the pipe line as quickly as the governor calls for. This is analagous to a freight train moving on a steep incline or on a very slight incline. If the freight train is on a slight incline, corresponding with a low head, and we release the brakes so as to set it into motion and it is necessary for us to get it into motion quickly, we would put an engine behind it to push the freight train to aid the action of gravity. If, on the other hand, the same freight train was on a very steep incline, there would be no occasion to push it with the engine to get it up

to the same velocity in the same time, gravity under such conditions acting very much more forcibly upon the acceleration of the train movement. The train on the steep track is analagous to an equivalent pipe line under a high head, which is the case at the Cottonwood and Division Creek plants. There is in these plants, therefore, no occasion to artificially accelerate the water in the by-pass. But there is a double reason for providing a by-pass or safety means to aid in the retarding or slowing-up of the water ~~corresponding with the slowing up of the water corresponding with the slowing-up of the freight train~~ by the putting on of the brakes.

Q. 303 If I understand you correctly, the normal position of the by-pass valves in the line drawings U and V is closed.

A. Or nearly closed. At times when the governor has not been in operation for some time. During the actual movement of the governor the normal position or average position of the valve is a partly open position.

Q. 304 Suppose that the load in the main shaft of the water wheel has been decreased. Will there be any movement of the by-pass valve?

A. If the load has been decreased sharply or suddenly to a material amount in proportion to the whole load, there will be a movement of the by-pass valve outwardly as the gate valve or the water gate controlling the water supply of the water wheel moves in a closing direction. This is the most important work that the by-pass valve has to do, and it

is of special importance in the Cottonwood and Division Creek plants, and is, primarily, the condition for which the by-pass and by-pass valve are therein installed. And in the event of the by-pass valve under the control of its dashpot being permitted through errors in adjustment or careless operation be permitted to return too quickly a damaging water-ram will be produced in the pipe line and, as testified to by Mr. Scattergood, this may reach a point where the pipe line will be broken. I might say that in my observation of the operation at the Cottonwood plant and Division Creek plant No. 2, previously testified to, I saw such movements distinctly take place not once but several times.

Q. 305 Is it not a fact that Lyndon describes and shows or attempts to describe and show a water wheel governor which will be sensitive to every slight variation of the speed of the water wheel?

A. That is true.

Q. 306 In the alleged infringing devices which you have testified concerning is there there shown a water wheel governor which will be sensitive to variations of speed of the water wheel to the same extent as that described and shown by the Lyndon patent in suit?

Mr. Blakeslee: Objected to as vague and indefinite.

A. I should say that there certainly was. The governors at both plants you have mentioned are highly sensitive.

Q. 307 Mr. Westall: Now, as briefly as possi-

ble, what great principle if any in waterwheel governing means do you conceive that Lyndon introduced into the art by the disclosures of the Lyndon patent?

Mr. Blakeslee: Objected to as calling for a mere repetition of testimony on the part of the witness. He has pointed out the features of the invention, analyzed the invention, interpreted the invention, and it does not seem that this is cross-examination in any sense. If counsel wishes to inquire as to the specific parts of the disclosure of the patent in suit, cross-examination may result.

A. I consider that Mr. Lyndon in the disclosure set forth in the patent in suit has introduced two new useful and extremely important principles which have come into extensive use, and by the use of which as disclosed by Mr. Lyndon have resulted in very much more satisfactory electrical service from hydro-electric plants. The two principles that I speak of are, first: that by preventing the overrunning of the governor which previous to Mr. Lyndon's invention resulted in an electrical service from hydro-electric plants that was erratic in voltage, and, therefore, in the supply of electricity to the various uses to which it was put, due to the speed fluctuations on account of the governor overrunning. Mr. Lyndon's invention prevented the governor overrunning, and, therefore, secured steady or constant voltage and prevented the flickering or wavering of lights and the speed of driving apparatus, as, for example, motors driving stamp mills, and concentrator tables in the min-

ing districts whose speed must be maintained constant to give good service. The service of electric current for driving mills and concentrators in the early days on this coast was defective in that the voltage varied, due to the overrunning of the water wheel governor to such a degree that many of the ~~many of the~~ mines would not, until after Mr. Lyndon's invention, use electric service for this purpose. The preventing of the governor overrunning enables a sufficiently accurate and constant electrical service to be supplied to make the service to mines adequate to meet their critical requirements. For example, if the speed is varied on a concentrator table the concentrates are either lost or the same degree of concentration not obtained. Hence the necessity of constant voltage and, therefore, constant speed which is only attained by preventing the governor overrunning. Second: The elimination of damaging effects, damaging to the governing and damaging to the safety of the pipe line, and, therefore, the power house and entire installation below the pipe line which might be and has heretofore frequently been, where breaks occurred in the pipe line, greatly damaged thereby due to the water from the broken pipe flowing down against the power house and over the property, interrupting the service and making necessary very extensive repairs. These he eliminated by permitting the quick movement of the water gate without reference to inertia effects in the pipe line and preventing any damaging inertia effect to the pipe line by by-passing the water synchronously

with the movement in a closing direction of the water gate and preventing the damage to the governing by permitting the quick movement of the water gate in a closing direction, and where the pipe line was long and the slope was gentle,—that is, the head was low,—enabling the governor to move in the opening direction with any required degree of rapidity and providing a corresponding closing movement of the by-pass valve so as to utilize the water velocity already existing in the pipe before such movement. I consider these two principles above mentioned as of the most vital importance to the art and as having been first disclosed and fully set forth by Mr. Lyndon, and as having subsequently been used to a very large degree with perfectly successful results.

Q. 308 By Mr. Westall: As briefly as possible will you state by what mechanical principles these results which you have described as being disclosed in the Lyndon patent were effected.

Mr. Blakeslee: Objected to as not cross-examination, these matters having been fully inquired into on direct examination of this witness and his answers thereupon having been full and complete, and, in fact, so full and complete that counsel at times objected to the attenuation thereof.

A My answer to your question is best recited in claims 3, 4, 6, 7 and 8, of the patent in suit, which may be read in to the record if you desire.

Q. 309 By Mr. Westall: Your counsel in question No. 66, on page 30 of the typewritten record, has used the following language as descriptive, I take it,

of a structure which he conceives would be an infringement of the patent in suit: "Have you seen any apparatus embodying a governor construction combined with a water gate and by-pass wherein the by-pass and water gate under the control of the governor operated inversely, each with respect to the other?" I will ask you to state if, in your opinion, a structure which could be appropriately so described would contain what you conceive to be the invention covered by any of the claims of the patent in suit?

A. Yes, sir.

Q. 310 Which of the claims?

A Claim 6 and probably others.

Q. 311 Which others?

A Well, Claim 7, Claim 8, Claim 9.

Q 312 Then, if I understand you correctly, you would say that that language would not describe a device which would infringe claims 1, 2, 3, 4, and 5 of the patent in suit?

A It might or it might not. Mr. Blakeslee's question does not go into the details of the governor. He merely mentioned certain elements. For example, he says "embodying a governor construction." A governor construction might readily infringe the claims of the Lyndon patent and still be described as a governor construction.

Q. 313 What would you add or subtract to or from the language quoted in the preceding question to make it an accurate description of a device which you would say contained the mechanical equivalents of Claims 1, 2, 3, 4 ~~and~~ 5 of the patent in suit?

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A I would use the language of the claims as thus descriptive.

Q. 314 But what element or elements would you add to that language to bring it within those claims?

Mr. Blakeslee: Objected to as having been answered by the witness, and, further, that the claims speak for themselves as to their terms, and, in order to answer the language of those claims, you would have to supply the parts called for by such language.

Mr. Westall: That is what I am asking the witness to do. I do not wish to have him read the claims into the record. I simply wish him to state—

A (Interrupting) I cannot state any more clearly than the language of the claim the elements covered by the claim. If you desire me to place in language the devices covered by said claims such that a governor construction would infringe such claims, the language I would obviously use would be the language of the claim. I don't 'see how I could do otherwise.

Q. 315 By Mr. Westall: Do you consider the following language used by your counsel at line 3, page 35, of the record in this case, as an appropriate description of a device which would be covered by any of the claims of the patent in suit: "A governor, a water gate, a by-pass, a means whereby the water gate and by-pass are inversely operated under the control of the governor?"

A. It is an abridged description of Claim 6.

Q. 316 Read the question. The question is not answered.

(The Examiner thereupon reads the question.)

A. Appropriate to the degree that the language goes of several claims.

Q. 317 Of which claims?

A. Claims 6, 7, 8 and 9.

Q. 318 Then you do not consider that the description which I have just quoted would be descriptive of a device which would infringe claims 1, 2, 3, 4 and 5 of the patent in suit?

A. As far as the language goes it is descriptive of the other claims in that it specifies a governor. The details of construction of such governor and the elements that enter into such governor he does not dwell upon. The same applies to the by-pass and by-pass valve. His description is as complete as it could be in a few words, and indicates clearly devices of the nature disclosed and claimed by Mr. Lyndon in the patent in suit.

Q. 319 But without adding other words as qualification or explanation to the language quoted, if I understand you correctly it would not describe a device, which in your opinion, would involve the invention claimed in claims 1, 2, 3, 4 and 5. Is that correct?

A. It would only indicate. Taken by itself, it is not sufficiently complete to cover an apparatus as disclosed in claims 1, 2, 3, 4 and 5, or the details of the apparatus in claims 1, 2, 3, 4 and 5.

Q. 320 Is there any element mentioned in any of claims 1, 2, 3, 4 and 5 which, if added to the language

quoted, would more nearly describe a device which you conceive would involve the invention in any of those claims?

A. The language of the claims themselves would be a better description of what is covered by said claims.

Q. 321 I am not asking you what is covered by the claims. I am asking you what element or elements in those claims should be added to the language which I have quoted to make that language descriptive of a device which you would say infringed those claims.

Mr. Blakeslee: Objected to as assuming something not in the testimony of the witness so far. The witness has never testified that anything should be added to the language under consideration to make the specific subject matter of claims 1 to 5 inclusive infringe the essence of the arbitrary wording under consideration, assuming that the wording were a claim in the patent in suit.

A. The language that should be added or used in order to describe a device which would infringe the said claims would be the language of the claims. In the language that you have mentioned, commencing on line 3 of page 35 of the testimony, "a governor" is a broad description of the detailed elements appearing in said claims 1 to 5 inclusive.

Mr. Blakeslee: The further objection is noted that if the question was directed at obtaining a response as to what would infringe said claims 1 to 5, in addition to the arbitrary language under consid-

eration, the question operates to alter the meaning of the said claims arbitrarily.

Q. 322 By Mr. Westall: You have made a distinction between claims 1, 2, 3, 4 and 5, and claims 6, 7, 8 and 9. What would you say is the particular distinction between those claims?

Mr. Blakeslee: The claims speak for themselves. If the question is directed to obtaining from the witness the construction of said claims, let the question so be put. As to the wording of the claims, such wording points the differences in terms.

A. I don't believe I can answer your question.

Q. 323 By Mr. Westall: Then, if I understand you correctly, the language quoted describes a device which would involve the invention disclosed in claims 6, 7, 8 and 9, but that you are unable to say whether the device so described would involve the invention of claims 1, 2, 3, 4 and 5.

Mr. Blakeslee: Objected to as assuming facts not testified to by the witness.

A. It might or might not.

Q. 324 By Mr. Westall: Under what conditions might it?

A. Under the conditions that the governor involved the devices more specifically set forth in claims 1 to 5 inclusive, it would not in the event of the governor not containing such devices.

Q. 325 Then if I understand you correctly, whether or not a device which could be correctly described by the language I have quoted would infringe claims 1, 2, 3, 4 and 5, would depend upon whether

or not that device contained in addition to the elements set forth in the language quoted those enumerated in claims 1, 2, 3, 4 and 5 as therein qualified? Is that correct?

Mr. Blakeslee: Now this line of examination assumes certain standards determinative of infringement and assumes several principles of law. I take it that the present proceedings are directed at determining whether the invention of the Lyndon patent in suit is found in the alleged infringing devices, what such invention is and what such alleged infringing devices are; and as to the matter of infringement, the same depends on a great many factors and, in so far as the questioning now and for some time previously indulged in concerns those legal determinations or legal conclusions as to the infringement, apart from interpretation of the patent and definition of the invention therein contained, a discussion and comparison of the alleged infringing devices, this line of questioning is objected to as calling for conclusions purely of law, which conclusions are not considered in the examination of the witness, but which must be arrived at in the presentation of the case before the court. Furthermore it is to be noted that the question of infringement concerns the entire invention in its full disclosure, and in such full interpretation and application as is brought out by the witnesses, and as to such interpretation and comparison there is no objection to the examination.

A. That is my opinion.

Q. 326 By Mr. Westall: You have testified that

you have taken out numerous patents on various hydraulic devices. Have you ever taken out or applied for any patent on water wheel governing apparatus?

Mr. Blakeslee: The question is objected to in so far as it pertains to any pending applications which the witness may be interested in, and the witness is informed that as to any such pending applications and the nature of the same or specific disclosures of the same, he may refuse to answer such questions unless directed by the court so to do.

A. I have so testified.

Q. 327 By Mr. Westall: Will you please give the dates and numbers of the patents that you have thus far taken out on water wheel governing mechanisms?

A. I don't know that I can do that at the present moment without searching the records. The records of the patent office on all issued patents are open to you and you will find that they are issued in my name, George J. Henry, Jr., during the last thirteen or fourteen years—quite a number of them. I can search in my files and answer the question more specifically if it is a vital matter to you.

Q. 328 Would the following language be descriptive of any of the structures or devices which you have heretofore described and illustrated as having been seen by you at the Division Creek No. 2 and Cottonwood plants in January of this year: "The combination of a water wheel; a nozzle through which water is delivered to propel the wheel; a second noz-

zle means for connecting such nozzles, valves for controlling ^{the supply to said nozzles & controlling} means connected with each valve and operating the valves simultaneously to open one and close the other.

Mr. Blakeslee: Objected to as irrelevant, immaterial, incompetent and not cross-examination.

A. If I were an examiner in the patent office and the description you have just given me was submitted as a claim, I would reject such claim on the Lyndon patent.

Q. 329 By Mr. Westall: You would therefore consider that such a device which could be appropriately so described would be an infringement of the Lyndon patent in suit? Is that correct?

Mr. Blakeslee: Objected to as assuming something not testified to.

A. That would be my first thought, but I would be open to argument to the contrary.

Q. 330. By Mr. Westall: Is it your opinion that a device or structure to which the description which I have quoted in my immediately preceding question would appropriately apply would embody the mechanical equivalent of a device constructed in accordance with the disclosure of the Lyndon patent in suit?

Mr. Blakeslee: The same objection, and it is not understood to be the province of the witness to draw claims of this issued patent. The patent has claims nine in number. They have been extensively considered and no further claims can be before the court and, as a matter of fact, the determination of a patent

depends upon the reading of the claims, together with consideration of the specifications and drawings and the invention therein and thereby disclosed.

A. I am inclined to think it would.

Q. 331 By Mr. Westall: Is there any doubt in your mind whether it would or not?

A. I would not care to answer the question with any greater degree of positiveness than I have without exhaustive consideration. The art is becoming highly developed and there are a great many devices that I would desire to review carefully and compare with the Lyndon specifications, drawings and claims, before I would feel justified in giving any more positive answer.

Q. 332 Can you suggest any element or elements which should be added to the language I have set forth which would make it a more appropriate description of the alleged infringing devices at the Cottonwood plant and the Division Creek No. 2 plant?

Mr. Blakeslee: The same objection as previously noted, and it is objected to that this is not cross-examination. If counsel wishes the witness to further define these embodiments and the organization and construction of these plants, let him ask the witness so to define them. If, on the other hand, he persists in this line of questioning and in his attempts to get the witness to construe language framed by him relative to these plants and the invention of the Lyndon patent in suit, we shall ask the court to consider that counsel is making, as he has apparently been attempting for some time to make, the witness

his own witness, and to consider the present testimony of the witness accordingly. This is a cross-examination or is supposed to be, and we contend that the proper time for the defendant to take testimony in defense is the time allotted for that purpose and not the time properly to be utilized in cross-examination.

A. I would substitute for the descriptive language you have given the language of the Lyndon claims.

Q. 333 By Mr. Westall: Which of the Lyndon claims?

A. 6, 7, 8 and 9, and it might be, upon more mature consideration, if I were allowed time to exhaustively study the language and the art, I might then add other claims of the Lyndon patent.

Mr. Blakeslee: At this moment and in view of the question just asked and for the reasons just stated, we ask that this question and the preceding question and all other preceding questions, together with the answers to all of the same, which have been directed at obtaining from the witness a construction upon certain language formulated by the complainant as purporting to be pertinent to the invention of the patent in suit and to the installations in the alleged infringing plants, be stricken from the record and withheld from consideration as not cross-examination.

Mr. Westall: Counsel for the defendant points out that this witness has testified as an expert and that he has exhaustively pointed out on direct exam-

ination and upon prior cross-examination what he conceives to be the mechanical equivalents of the devices shown, described and claimed in the Lyndor patent in suit, and that these questions are only directed to having him further describe in other language so that we may have his meaning entirely clear upon this record as to what he saw at the said Cottonwood and Division Creek No. 2 plants which are alleged to be infringements.

Mr. Blakeslee: There is a vast difference between properly tracing equivalence between the disclosures of a patent alleged to be infringed and the things alleged to infringe the same, on the one hand, and the attempted development of equivalence between the disclosure of the patent alleged to be infringed and certain arbitrary words thus framed and formulated on cross-examination and not shown and not built upon or said to be built upon the things alleged to be infringed. This latter procedure is not cross-examination. It pertains to the development of the defense, if to anything material to determining the issues of the case. And we persist in our motion just made.

Q. 334 By Mr. Westall: Does the following language correctly describe the structure and devices which you have testified on direct examination as having been seen by you at Division Creek No. 2 and the Cottonwood plant in January of this year: "The combination of a water wheel, of a nozzle at one side of the wheel, and through which water is supplied to propel the wheel, a second nozzle, means

of connecting the nozzles, valves within said nozzles and means connected for each valve to simultaneously open one valve and close the other?"

Mr. Blakeslee: The same objection is noted and the motion just made is repeated with respect to this question, and counsel is notified that if this kind of questioning is persisted in a motion will be made at the proper time to tax against the defendant the entire cost of taking and transcribing and returning the cross-examination record of the present witness.

Mr. Westall: Counsel for the defendant states that the previous suggestion of counsel is entirely superfluous and unnecessary, and is merely a repetition of prior threat of that nature.

A. No, sir.

Q. 335 By Mr. Westall: In what respect is the description just referred to inaccurate?

Mr. Blakeslee: The same objection and notice is repeated.

A. It would appear to me that there is no nozzle on the side of the wheel in the alleged infringing structures.

Q. 336 By Mr. Westall: In other respects would you consider the description accurate?

Mr. Blakeslee: The same objection and notice.

A. No; I would not consider it accurate.

Q. 337 By Mr. Westall: In what other respects is it inaccurate?

Mr. Blakeslee: The same objection and notice is repeated.

A. I would not care to specify wherein it was

inaccurate without an exhaustive consideration of the description you have given before me and a careful study of the devices to be compared therewith.

Q. 338 By Mr. Westall: If I understand you correctly, then, you are unable to state whether or not the language which I have quoted to you in the preceding question is an accurate description of the devices alleged to have been seen by you at the Division Creek and Cottonwood plants? Is that correct?

Mr. Blakeslee: The same objection and notice is repeated and this is to be understood as repeated to all questions put along this line of alleged cross-examination.

A. I do not believe it to be an accurate description.

Q. 339 By Mr. Westall: Why do you not believe it to be an accurate description?

A. I have already answered that question.

Q. 340 The only respect, then, I take it, in which you find it to be inaccurate is that stated in your previous answer? Is that correct?

A. That, and possibly others which I could develop on more mature consideration, and it is at least inaccurate in that degree.

Q. 341 What others do you believe you might point out on mature consideration?

A. I could not say without mature consideration, in advance.

Q. 342 How much consideration or time would you need to spend?

A. I might want an hour and I might want a day. If you leave the question with me I will be very glad to answer your question specifically later on in the case.

Q. 343 Very well. Then let the record show that the full answer to the question be postponed until later in the case.

Mr. Blakeslee: In view of the persistence of this line of inquiry, I ask that the Special Examiner immediately transcribe or have transcribed under his direction the language under consideration, and that the same, approved by the Examiner, be forthwith handed to the witness.

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Prof. Huggins was thereupon recalled for cross examination resumed

Q. 344 By Mr. Westall: During the intervening adjournment have you succeeded in sufficiently considering to be able to answer the question which was held over from the preceding session?

A. No, sir.

Q. 345 Do you expect to be able to answer that question after further consideration?

A. Yes, sir.

Q. 346 Now, I understand from your explanations of the operation of the alleged infringing devices as disclosed in the drawings and photographs which have been produced, that the opening of the auxiliary nozzle has the effect of reducing or retarding the speed of the water wheel, and the closing of such nozzle has the effect of accelerating the speed of the water wheel. Is that correct?

A. It has the effect of reducing to a minimum the

inertia effects of the water, which water would through the water gate or main nozzle, if those inertia effects existed, produce the defective results previously testified to.

Q. 347 To answer the question directly, would you say broadly that that is the effect of opening and closing such nozzles?

A. No; I would not.

Q. 348 Referring now to the line drawings U and V which you have offered in evidence, please state whether the exact placing of this water wheel as here indicated by you would have any effect upon the question of identity of the alleged infringing devices and that of the patent in suit.

A. Yes, sir; it would, in that the water wheel must of necessity be in the path of the water from the needle nozzle or water gate and must be clear of the by-pass valve or the path of the jet from the by-pass valve.

Q. 349 So if I understand you correctly, if the jet of the by-pass valve struck the water wheel in any way that there would be a departure even though all the other elements and arrangements of the devices which you have described as being infringing devices, were constructed in the exact manner in which you have pointed out and described?

A. That would be a variation from the patent in suit and from the apparatus as installed in the alleged infringing devices.

Q. 350 So that merely the placing of that wheel so that it would be struck by the water from the by-

pass valve, in your opinion, even though all the other elements were assembled in the exact manner in which you have testified they were assembled, would avoid the charge of infringing.

Mr. Blakeslee: The foregoing objection and notice are considered as repeated, and the attention of the court is directed to the manifest fact that the defendant's counsel is trying to put in a defense in cross-examining the witness. Any defense that is set up in the defendant's answer cannot be presented at this time nor is any comparison of the disclosure of the patent in suit proper with any other devices or constructions than those which are before us and concerning the disclosure of the patent in suit and the construction of the alleged infringing devices.

Mr. Westall: Counsel for the defendant points out that he is not at this time speaking of any defenses that have been set up in the answer. He is putting certain hypothetical questions to the witness based upon his previous testimony explaining the mechanisms here involved, and these questions are merely directed to a further elucidation of those mechanisms and devices.

A. No; you did not understand me correctly. I have not so testified.

Q. 351 Will you please read the last question?

(The Examiner thereupon reads the last question.)

Mr. Blakeslee: The further objection is noted that counsel is manifestly making the witness his own as he has been doing for some time and I will

ask the court to keep this in mind during the continuation of this line of inquiry.

Q. 352 My Mr. Westall: Then I understand you to say that the placing of the water wheel so that it will be struck by water from the by-pass valve would not necessarily be such a vital change in the structures which you have described and illustrated as you would be willing to say would affect the charge of infringement? Is that correct?

A. I would not be willing to say that the case that you have assumed would be one which would necessarily avoid infringement.

Q. 353 Will you please state your reasons, if you have any, why the placing of the water wheel in the manner in which I have suggested might or would not be a departure from the invention of the Lyndon claims or any of them.

A. I would have to have before me a drawing showing the device that you have in mind, and compare such device with the claims of the Lyndon patent, in order to intelligently answer your question.

Q. 354 Well, taking up, for instance, Claim 6 of the Lyndon patent: Would you say that the device constructed and arranged as you have testified as having seen at the Cottonwood plant and Division Creek No. 2 plant, but having the water wheel placed so as to be struck by the water from the by-pass valve, would not be the mechanical equivalent of said Claim 6.

Mr. Blakeslee: This question is further objected

to as indefinite and does not fully convey what may or may not be in counsel's mind with respect to the points of the wheel to which the water might so be directed against, whether at the same side or at the opposite side of the wheel.

A. I would have to have before me a drawing or sketch showing the device that you have in mind, to answer your question intelligently.

Q. 355 By Mr. Westall: Well, then, assuming that the wheel was placed as I have shown it in the red dotted line on Complainant's Exhibit V, would you say that a device constructed in every other way in accordance with the device which you have described and illustrated as being in use in the Division Creek and Cottonwood plants, but with the exception that the wheel was placed as so indicated, would not contain in your opinion the mechanical equivalents of any of the claims of the patent in suit?

A. I should not like to answer that question without a great deal of consideration. The question of whether or not a device infringes another or the claim of some invention, is one that cannot be answered hurriedly. I would want to weigh very carefully the operation, the means involved and the effects in the adaptation in the device in actual practice as compared with the device built under the claims. I might say that no such arrangement as you have indicated in the red dotted line exists in the combination of devices at the Division Creek No. 2 plant or the Cottonwood plant previously testified to, and I cannot at the moment conceive of the devices

of these two plants being arranged in a manner such as you have shown, of producing a satisfactory operating result.

Q. 356 With a water wheel placed as I have indicated in the red dotted line, would you say that the language of Claim 6 is an inappropriate description of any of the alleged infringing devices as so modified?

A. I will repeat my last answer in regard to that.

Q. 357 Then, if I understand you correctly, you would not care to say that the language of Claim 6 would be an appropriate description of the device so modified? Is that correct?

A. I would not consider that modification, as you have shown it in the red dotted line in drawing Exhibit V and as assumed in your question, would be described as in Claim 6 of the Lyndon patent in suit.

Mr. Blakeslee: The motion previously made to strike from the record and withhold from consideration is repeated particularly with respect to the last question and answer, as upon the face thereof the inquiry is directed at comparison between the disclosure of the patent in suit and something else arbitrarily at variance with anything before us, proven or alleged to be in infringement of the patent in suit.

Q. 358 By Mr. Westall: Referring now to the drawings of the patent in suit, please point out and indicate what part or parts you understand are meant by "means for returning the by-pass valve to normal position on completion of governing movement of the water-gate-operating means."

Mr. Balkeslee: ^aObjected to as not cross-examination. [^]

A. I do not understand that the by-pass valve returning means is set into operation at such a time. It may be acting at a very slow rate, but as far as its influence is concerned during the—

Q. 359 (Interrupting) I don't believe that you get the question. Will you read the question, please? (The Examiner thereupon read the question.)

A. Dashpots and weights 69 and 70 are shown, two in number, in Lyndon patent for this purpose. In some instances but one of these pairs might be used and in some instances neither of them.

Q. 360 Is there any indication in the specifications or drawings of the Lyndon patent in suit that suggests that one or both of these might be dispensed with?

A. Yes, sir.

Q. 361 Where is it?

A. Claim 6.

Q. 362 Then, if I understand you correctly, it is your understanding that because Claim 6 does not include the means for returning the by-pass valve to normal position on completion of governor movement of the water-gate-operating means that you understand that as an indication that the patentee considered that they might be left out of his device? Is that correct?

A. That is correct, with the understanding that the device remaining would still involve elements of his invention.

Q. 363 Referring now to the photographs and drawings which have been offered in evidence of the alleged infringing devices, please indicate briefly without explaining their operative connections the parts, if any, which you conceive are the equivalent of means for returning the by-pass valve to normal position on completion of the governing movement of the water-gate-operating means.

A. I previously testified that such element exists in the apparatus at the Division Creek No. 2 plant and at the Cottonwood plant as in Complainant's Exhibit H, the oil-actuated dashpot with its side springs as shown in the part lettered OO. In Complainant's Exhibit I these parts are indicated at OO, SS and WW. In the case of the Cottonwood installation this device does not show in the photographs on account of its being in the dark portion of the nozzle pit behind the apparatus shown in Exhibit F. Both of these dashpots are very clearly shown in the line drawings Complainant's Exhibits U and V, and marked "oil dashpot."

Q. 364 Claim 8 of the patent in suit calls for the by-pass normally held in partially open position. Do you find anywhere in the alleged infringing devices a by-pass valve normally held in partly open position?

A. As previously testified to in your cross-examination, I stated that at the Division Creek plant the by-pass valve was normally held in partly open position while the water wheel apparatus was under inspection by Mr Daehler and myself. At the Cottonwood

plant the by-pass valve appeared to be closed or nearly closed during the periods of governor inactivity. During periods of governor activity its average position was off of the valve seat to a greater or less degree.

Q. 365 How do you know that such valve at the Division Creek plant is held in normally partly open position?

A. By inspection.

Q. 366 You believe that to be the normal position that you observed at that time?

A. It was the normal position during the period that I examined the plant. I doubt very much if it is kept open normally during any material degree during governor inactivity. The probability is that the valve is allowed to return to full closure or very nearly full closure upon the completion and cutting-out of the governor mechanism. I do not consider such position normal position in the same sense that I do normal position during periods of governor inactivity.

Q. 367 So that if you did say that the normal position of both valves at the plants which you have inspected would under ordinary circumstances of governor inactivity be closed, is that correct?

A. Substantially so; and during periods of governor activity would be open and in reverse connection with the water gate and in reverse operative movement with the water gate or needle valve.

Q. 368 Do you consider that the valve held in normally closed position such as you have described,

is a mechanical equivalent of a valve such as described in the Lyndon patent as being held in normally open position?

A. Well, a closed valve is not the same thing as an open valve. I consider that the valves are mechanically equivalent in the sense that they are substantially the same devices for producing the same results.

Q. 369 Point out in the drawings of the patent in suit the controller of Claim 8 responsive to the speed of the water wheel and controlling said reversing means.

A. Solenoid 33.

Q. 370 Briefly enumerate in the photographs and drawings of the alleged infringing devices the parts which you conceive to be the equivalent of a controller responsive to the speed of the water wheel and controlling such reversing means.

Mr. Blakeslee: Objected to as calling for a third repetition of the same testimony on the part of the witness.

Mr. Westall: Counsel for the defendant suggests that this testimony has reference to a claim which has not yet been inquired about on cross-examination and which is alleged to be infringed.

A. As pointed out above in cross-examination, I consider that the controller responsive to speed changes in the device which I testified to previously in connection with the photographs of the alleged infringing apparatus as being such controller.

Q. 371 Please point out briefly in the drawings

in the patent in suit the parts you understand are meant by the language of Claim 8 "means operated by said controller to bring the aforesaid clutch into operation and to release said clutch when the governing action is affected"?

A. I have pointed out said elements very fully in my answer to question 140 on page 121 of the record.

Q. 372 I will ask you to point out in the alleged infringing device any part or parts which you conceive to be accurately described as means operated by said controller to bring the aforesaid clutch into operation and to release said clutch when the governing action is effected.

Mr. Blakeslee: Objected to as incomplete, as "these means" are not located in any way, and there is no reference made to anything to identify "these means".

Mr. Westall: I am asking the witness to identify the means and point them out in the alleged infringing devices.

Mr. Blakeslee: It is noted that reference is made to "said controller" and unless the controller is identified, how can anybody make out what means are meant?

Mr. Westall: Counsel for the defendant points out that infringement of that claim is charged and that the means mentioned in part of the claim, and in order to find infringement it must be found or its mechanical equivalent must be found in the infringing devices.

Mr. Blakeslee: No reference has been made in the question to any claim.

A. If you have reference to any of the wording in Claim 8, I repeat my answer as given in the answer to question 140, to which I have directed your attention in my last answer.

Q. 373 By Mr. Westall: What part do you understand is meant in the language of Claim 9 by "a clutch, adapted to connect such operating means with the water-gate-operating shaft"?

A. In the Lyndon patent this refers to the clutch actuated through magnet 64.

Q. 374 Please point out briefly the part or parts in the alleged infringing structure which you conceive to be the equivalent of a clutch adapted to connect such operating means with the water-gate-operating shaft.

A. The mechanical equivalent I should consider might readily be construed to be, and I would so consider it to be, the oil dashpots.

Q. 375 Do you include in the oil dashpots any other mechanism than simply the casing of the oil dashpots and the piston?

A. Oh, yes; the oil dashpot and its associated parts.

Q. 376 Mention its associated parts.

Mr. Blakeslee: Objected to as calling for mere repetition of testimony given by the witness previously.

A. All those parts which affect its movement, and the oil flow, and that influence the relative move-

ment between the by-pass valve stem and the water-gate-operating shaft, all as previously testified to.

Q. 377 By Mr. Westall: Where, if at all, in the alleged infringing device do you find the electro-magnetic device connected to such dynamo of Claim 9?

A. I do not find any such electro-magnetic device in the alleged infringing apparatus.

Q. 378 Where, if at all, in the alleged infringing devices do you find a controller operated by said electro-magnetic device and controlling the said reversing gear?

A. I find a controller as testified to a number of times before, but such controller is not actuated by an electro-magnetic device.

Q. 379 Please point out briefly in the alleged infringing device the part or parts which you conceive to be appropriately described as "a magnetic device controlling the aforesaid clutch with the by-pass-operating means" as called for in Claim 9 of the Lyndon patent in suit?

A. I do not find any magnetic device in the alleged infringing device as you have described.

Q. 380 Please also briefly point out in the alleged infringing device any part or parts which you conceive to be appropriately described as "a circuit for said magnet and means operated by said controller in its movement in either direction to close such circuit."

Mr. Blakeslee: Objected to as impossible of answer in view of the previous answer of the witness, that there is no magnetic device in this alleged

infringing apparatus. So how can there be any circuit for such magnetic device which device does not exist?

A. I do not find any circuit for electrical energization of any parts or any electro-magnet parts as mentioned in your last several questions in the alleged infringing apparatus.

Q. 381 By Mr. Westall: Do you find the mechanical equivalents of such magnetic devices in the alleged infringing devices?

A. The mechanical equivalent of the "dynamo connected with the water wheel" is the fly-ball element sensitive to speed change; the electro-magnetic device and controller operated thereby is the winding of the solenoid; the solenoid and its plunger; and in the alleged infringing apparatus it is what I have previously testified to as the controller. The mechanical equivalent of the magnetic device controlling the aforesaid clutch to the by-pass-operating means has for its mechanical equivalent in the alleged infringing apparatus all dashpots connecting the by-pass needle stem to the water-gate-operating means. The mechanical equivalent of the electric circuit which would energize such magnet is the transmission of movement through the several parts above specified.

Q. 382 You have testified that Exhibits U and V were line drawings showing the interior construction of the nozzles and their alleged governing means which are said to be infringements of the patent in suit. I will ask you to state how you know the noz-

zles and their needle valves are constructed as shown in said Exhibits.

A. I did not use the word "interior" in my description of these drawings, because they only show the needles and needle valves as dotted lines. I also stated that they were not dimension drawings but were approximately correct as regards the dimensions, valves, and valve parts. I have seen many of these devices in operation and I am thoroughly familiar with their general appearance and outward and inward characteristics, and particularly with what takes place in the water wheel pit and surrounding apparatus. From my knowledge of these matters I know the present drawings to be correct in regard thereto, as previously testified.

Q. 383 In regard to the construction of the springs shown in the oil dashpot and its adjusting means, how do you know that you have in the drawings referred to correctly represented those details?

A. The springs and other parts that you have mentioned and that I have represented clearly show in the photographs of the apparatus, Complainant's Exhibits E to P inclusive.

Q. 384 Do you consider that the fly-balls G in Exhibit E and Exhibit G and the fly-balls CC in Exhibits J, K and H, are responsive to speed variations of the water wheel to the same extent as contemplated by Lyndon in the disclosures of the patent in suit?

A. Substantially so.

Q. 385 When you say "substantially so", do

you mean that the Lyndon disclosure showed a device which would be more or less sensitive to speed variations?

A. I believe the electro-magnetic means that Mr. Lyndon has described would be slightly more sensitive.

Q. 386 Can you state positively that you have never seen prior to the date of the Lyndon patent in suit a water-wheel-governing device where a by-pass valve and a water-gate operating inversely to each other, responsive to changes in speed of the water wheel, through the agency of the governor?

A. I can.

Q. 387 How do you fix the date?

A. I fix the date by my knowledge of the art at about that time being gained first through a study of patents. During the year 1898 I returned to San Francisco from New York. During the years 1900 and 1901 I first began to be considerably interested in patents and their disclosures. I did not make any exhaustive study at that time of any patents, but my attention was directed to patent matters in my practice to a greater degree than it had been earlier. I was therefore particularly interested in any new ingenious and useful devices during the years 1900 or 1901 upon seeing such a device or any of the devices disclosed by Lyndon and to which I have testified as being new, and I am sure that my attention would have been fixed upon them. I am certain that I had not previously seen such devices as I had visited comparatively few water-wheel plants at that

time,—probably not more than twenty-five or thirty,—and the devices which I had seen in them were therefore quite familiar to me during the years 1900 and 1901. I had been in hydraulic engineering professional work only about five years, and my memory was therefore such that the devices I had seen would have been familiar to me. And had I seen any devices which would have accomplished the results shown in the Lyndon patent in suit, it could not help but have made an impression on me which would have persisted not only to the years 1900 and 1901, but to the present time.

Q. 388 And what do you consider the broadest claim of the Lyndon patent in suit?

Mr. Blakeslee: Objected to as calling for a conclusion of law.

A. I don't know.

Q. 389 Is it your idea of the doctrine of mechanical equivalence that any water-wheel governor or electrical means in a water-wheel governor in which there is the combination with means for operating the water-gate in either direction, a by-pass for the water-wheel, and a valve controlling said by-pass, of means connected to the water-gate-operating means and operating the by-pass valve inversely to the operation of the water-gate, would contain the invention to be an infringement of the Lyndon patent in suit?

Mr. Blakeslee: The objection and notice of motion heretofore made and repeated relative to a requested comparison by the witness of the disclosure

of the Lyndon patent with arbitrary word-things formulated by counsel, are repeated, and it is again called to the attention of the court that counsel has persisted in making the witness his own.

Mr. Westall: Counsel for the defendant simply suggests that if counsel for complainant would have been watching the wording sufficiently he would have noticed that I am only quoting Claim 6 of the patent in suit.

Q. 390 The question is withdrawn. ^{It} ~~is~~ your idea of the doctrine of mechanical equivalence that any water-wheel governor in which is found the combination with means for operating the water-gate in either direction, a by-pass for the water-wheel, and a valve controlling said by-pass, of means connected to the water-gate-operating means and operating the by-pass valve inversely to the operation of the water-gate, regardless of the form of that water-wheel governor, would be the mechanical equivalent of the devices shown and described in the Lyndon patent in suit.

Mr. Blakeslee: The equivalence as between the alleged infringing structures and parts thereof, and the disclosure of the patent in suit, is open to consideration in this testimony. On the other hand, the doctrine of equivalence is a legal doctrine, and we object to the question as calling for an opinion of law on the part of the witness.

A. If the devices enumerated in said claims were for accomplishing substantially the same results in

substantially the same manner, I would so consider it.

Q. 391 By Mr. Westall: If they were for the purpose of accomplishing the same results in substantially a different manner but included the elements combined as set forth in Claim 6 of the Lyndon patent, would you consider them to embody the mechanical equivalent of the devices shown and claimed in the Lyndon patent in suit?

Mr. Blakeslee: The same objection. Counsel should not attempt to clothe the witness with a judicial function.

Mr. Westall: Counsel for the defendant disclaims any desire or purpose of usurping the functions of the court. He simply points out that this witness has testified concerning what he conceives to be mechanical equivalence of the devices shown and described in the Lyndon patent in suit, and the question is merely directed to ascertain how far the witness conceives the identity of mechanical means and devices may be carried.

Mr. Blakeslee: And we reply that it is immaterial and irrelevant and incompetent. Whatever the conception of the witness may be in this direction, the application of the doctrine of mechanical equivalence is for the court and solely for the court. A witness can call things equivalent. It is for the court to say whether they are.

Q. 392 By Mr. Westall: Can you conceive of any water-wheel governor embodying the elements set forth in Claim 6, and of which Claim 6 might be

appropriately descriptive, and accomplishing the same result or substantially the same result as Lyndon, that in your opinion would not be the mechanical equivalent of the devices shown in the Lyndon patent in suit.

Mr. Blakeslee: The same objection. The conception of the witness is absolutely irrelevant in this respect: there is nothing to deal with in cross-examining the witness as to structures pertaining to the issues of infringement other than those of the Lyndon patent in suit and those alleged to infringe the same.

A. I cannot say.

Q. 393 By Mr. Westall: You say that you cannot conceive of such——

A. No. I said I could not say. I could not say whether I could conceive of it or not. I might be able to conceive of such a thing if there was some concrete presentation, and if my thoughts were directed along certain specific lines that you may have in mind. For me to say in the abstract that I might or might not be able to conceive of something, is difficult, until the conception is presented either in my thoughts or by you to me.

Q. 394 There are certain contacts, namely, those at 45, 46, 103 and 104, which have been illustrated and described in your previous testimony as being mercury contacts. Is there anything in the patent in suit which would lead you to believe that Lyndon contemplated that those contacts should be mercury cups?

A. As I have previously testified, Lyndon clearly shows in Figure 6 on the patent in suit that he has in mind liquid or mercury contacts.

Q. 395 But I understand that there is nothing in the specifications other than the drawing that you have mentioned which indicates that he had that idea in mind. Is that correct?

A. He refers to the figure in his specifications, and I understand the figure to be a part of the specifications. Other than that I know of no reference.

Q. 396 As to the contact at 103 and 104, is there anything in the drawings that shows those contacts to be mercury contacts?

A. Mercury contacts are quite old in the art and fairly well known to anyone dealing with the designing and construction of electrical devices such as Mr. Lyndon discloses, and I cannot conceive of any better disclosure of his intentions in this regard than that of Figure 6. It certainly does not require any invention or should not be necessary to incumber the specifications with any further reference to contact being liquid or mercury contacts than that disclosed in Figure 6.

Q. 397 But you have not answered my question directly. I was asking you only with regard to the contacts 103 and 104.

A. I consider the disclosure of Figure 6 ample in regard to making the intention clear on this point.

Q. 398 I am not speaking of the intention, but I am speaking of the actual drawing. Does it show or does it not show mercury contacts at 103 and 104?

A. I consider that it does only to the extent that he has brought in Figure 1 as substantially the same contacts, 45 and 46, and, as such, I would assume them to be. I do not find any other disclosure indicating mercury contact than that previously testified to.

Q. 399 So that it is necessary to assume that those two contacts are mercury contacts. Is that correct?

A. It is necessary for one who is at all familiar with the art to apply ordinary intelligence to interpreting Mr. Lyndon's disclosure.

Q. 400 Now, you testified that mercury contacts are old. Solenoids are still older, are they not?

A. I don't know which is the older, but they are both quite old.

Q. 401 And how about magnets such as shown at 15 and 16 and 32 and 64?

A. The same applies.

Q. 402 And electrical circuits such as shown and described by Lyndon. Is there anything new with the Lyndon patent in those?

A. There is nothing new in the establishment of electrical circuits.

Q. 403 Is there anything new in using a solenoid to operate a clutch?

A. I don't think so.

Q. 404 So that any novelty of the Lyndon patent does not reside in the specific means that he has employed for actuating the different mechanisms controlling the valves?

A. I cannot say that because——

Q. (Interrupting) I am saying, the specific means employed.

Mr. Blakeslee: Objected to as indefinite.

A. I cannot say that there is any novelty in some of the specific means. There is no novelty in those parts mentioned in the previous three answers.

Mr. Blakeslee: We will concede that solenoids and electro-magnets and electrical paths through circuit wires were old at the time of the Lyndon invention.

Q. 405 By Mr. Westall: Then it would be proper to say, would it not, that the essence of what was contributed to the art by Lyndon was the inverse operation of the gates for the purposes which he has shown and described. Is that correct?

A. I have already answered your question very fully as to the essence of the Lyndon invention earlier in this cross-examination, and do not see now how I can further amplify in regard thereto.

Q. 406 Regarding the consequences of the energization of the different magnets and their resulting operations, is it not a fact that unless the contacts at 45, 46, 103 and 104, and at 40 and 41, are mercury contacts, that there can be no succession of the energization of the different magnets such as you have described?

A. Oh, no; there are other ways of doing it. We might use metallic contacts on springs, and probably other ways besides that. But it at least occurs to me as an alternative method.

Q. 407 But adopting specifically the device disclosed by the Lyndon patent, without any material alteration of the parts, is it not necessary to have mercury contacts at the places I have indicated?

A. No; I do not so consider it. My last answer would apply in this case.

Q. 408 When you took up the subject of purchasing this patent from Mr. Lyndon was there any correspondence between you in regard to alleged infringements which you have testified to in this case?

A. There was not.

Q. 409 When Mr. Lyndon first wrote to the Pelton Water Wheel Company as you have testified, four or five years ago, with what specific installation, if any, was his letter in reference to?

Mr. Blakeslee: In so far as this question involves or may involve and apparently does and must, matters pertaining to the interests and records of a company with which the witness has testified he was then associated, the question is objected to as improper on the ground that it may cause a breach of confidence on the part of the witness if answered, and that it calls for matters irrelevant, incompetent and immaterial to any issues which have been so far developed in this case. And the witness is informed that he may use his discretion in answering this question unless, of course, ordered to answer it by the court.

A. I do not know now, and I believe that I never did know.

Q. 410. By Mr. Westall: As chief engineer of

the Pelton Water Wheel Company it is a part of your duties to consider bids for work taken by that company, was it not? That is to say, to consider the type and styles of devices which the Pelton Water Wheel Company contemplated putting in.

Mr. Blakeslee: Objected to as calling for a repetition of the testimony in direct by this witness.

A. Yes, sir; it was.

Q. 411 By Mr. Westall: As chief engineer of the Pelton Water Wheel Company you considered and advised with other officers of that company in relation to certain work on the Los Angeles aqueduct, did you not?

Mr. Blakeslee: The objections last previously made are repeated.

A. I believe so.

Q. 412 By Mr. Westall: And as such engineer you put in a bid on the part of the Pelton Water Wheel Company? With your advice, assistance and direction they put in a bid for that work, did they not?

Mr. Blakeslee: The same objection.

A. I believe so.

Q. 413 And that bid was put in in competition with the Abner Doble Company, was it not?

Mr. Blakeslee: The same objection.

A. I don't remember.

Q. 414 By Mr. Westall: The Pelton Water Wheel Company offered, did it not, to put in the hydraulic plants at Division Creek No. 2 and Cottonwood plants, did they not?

A. There is no desire on my part to avoid making this matter very clear, but to do so I might state that I have no knowledge and do not believe that I had any knowledge at the time as to the exact location of the apparatus being tendered for, and in regard to which you have asked. I remember very distinctly that the Pelton Water Wheel Company, as represented by me at the time, put in a tender to the city of Los Angeles for certain work on one of their construction plants. I saw on the 2nd of January this year certain apparatus in the Cottonwood plant which I believe to be the same apparatus, being the water-wheel unit No. 1 in the said Cottonwood plant as distinguished from water-wheel unit No. 2, about which nearly all of this testimony has been given. By referring to Complainant's Exhibit R, I will say that the more distant unit—that on the extreme right hand—is what is known as unit No. 2, and in regard to which there has been full discussion and disclosure and alleged infringement in the present case. The No. 1 unit, which is in the foreground, is, I believe, the Pelton unit about which you have asked me.

Q. 415 By Mr. Westall: The apparatus put in by the Pelton Company involved water-wheel governors, did it not?

pressure
A. It involved a Lombard type R vertical oil gusher governor, as previously testified.

Q. 416 And needle valve and by-pass constructed substantially in accordance with either the line drawings U or V?

A. No, sir.

Q. 417 In what respect did it differ?

A. In that it was a deflecting nozzle containing a hand control needle valve, the water jet being deflectable from the wheel through the action of the governor.

Q. 418 Did the Pelton Company put any bids in for any of the work on the line of the aqueduct involving any other form of nozzles than the one of the deflecting type which you have described?

Mr. Blakeslee: The same objection.

A. I don't know.

Q. 419. By Mr. Westall: Is it not a fact that the Pelton Water Wheel Company did put in a bid to do certain work in connection with some of the plants on the line of the aqueduct, involving a device substantially in accordance with that described by you as being in use at the Division Creek and Cottonwood plants?

Mr. Blakeslee: Objected to as irrelevant, immaterial and incompetent.

A. I have already answered this in my previous answer which I now repeat.

Mr. Westall: I believe that is about all.

Mr. Blakeslee: I will not proceed with the redirect examination of the witness and then, in accordance with the reservation made when the witness was last excused, to recall the witness for further direct examination, subject, of course, to the right of counsel for the defendant to re-cross upon such direct.

REDIRECT EXAMINATION.

By Mr. Blakeslee:

Q. 420. I believe, Mr. Henry, that you testified that

there was a gate-operating shaft "D" shown in photos Exhibits E to P. What is the designation of this operation shaft in these photos?

A. "D" in Complainant's Exhibits E, F and G, and "HH" or "LL," as these latter two are connected together, in Exhibits H and J.

Q. 421. Now, you have testified that Lyndon's explanations and disclosures in the patent in suit, taken with your explanations, are enough for one skilled in the art to fully understand the Lyndon device. Please state as to whether or not Lyndon's explanation in the patent as the disclosure in the patent in suit is sufficient to enable one skilled in the art to understand the invention without your explanations as given in testimony?

A. I so consider it.

Q. 422. Will you please compare Complainant's Exhibit Z and ZZ with any corresponding device shown in Complainant's Exhibits E to P inclusive.

A. The devices shown in Exhibit ZZ are all clearly shown in the same relative operative combination in Complainant's Exhibits E and G of the Cottonwood plant, in Complainant's Exhibits H, J and K at the Division Creek plant, and in Exhibit R, which latter exhibit I also include to show the devices illustrated in Exhibit ZZ, in both units in the Cottonwood plant, thus making three governing devices in these two plants involving the elements disclosed in Exhibit ZZ.

Q. 423. And do the designating wordings upon Complainant's Exhibit ZZ applying to the several parts and groups of parts, apply correctly to the corresponding part in the exhibit photograph to which you have just referred?

United States
Circuit Court of Appeals
For the Ninth Circuit

Transcript of Record

GEORGE J. HENRY, Jr.,
Complainant.

vs.

CITY OF LOS ANGELES,
Defendant.

VOLUME 2
(Pages 401 to 800 Inclusive)

Upon Appeal from the United States District Court for
the Southern District of California,
Southern Division

A. They do.

Q. 424. And as to Complainant's Exhibit Z, please point out again what difference, if any, exists between the same and Complainant's Exhibit ZZ.

A. The differences that exist between Exhibit ZZ and Z are that the Exhibit ZZ illustrates the addition of "means actuated by said controller on movement thereof from normal position to engage said clutch with said shaft so as to cause the return of the controller to normal position and interrupt the governor action before it has overrun the proper amount" and "actuating means controlled by said controlling means to return the controller to inoperative position so as to prevent excessive movement of the governor."

Q. 425. Now, as to what you believe was new with Lyndon's, as reflected and evidenced by the disclosure in the patent in suit, without further defining this, please state whether such novelty attached to the separate detailed parts, such as magnets and solenoids, per se, or to the general combination and inter-relation and inter-operation of parts, or both.

A. I consider that it is broadly a combination, inter-relation and actuation of several parts and also in addition thereto the use of a specially wound electro-magnetic means sensitive to speed variations, in which the voltage varies to a greater degree than the speed, as a separate and distinct invention.

Q. 426. Now, will you please state whether or not the parts controlled under the action of solenoid 33 and of the core thereof and the parts connected therewith, together with the features controlled by the circuits made

through the contacts 40 and 41, and together with the feaures controlled through the circuits made at the contacts 45 and 46, permit of the operation of the governor apparatus of the Lyndon patent in suit so that the water gate may be operated independently of the by-pass and by-pass valve.

A. Yes, sir; it may be. Referring to blue prints Exhibits AA, BB, CC and DD, this manner of making two or more sets of contacts is clearly set forth.

Q. 427. Now, in claims 1 to 5 inclusive of the Lyndon patent in suit, I do not find any reference to a by-pass or by-pass valve. From your understanding of the disclosure of the Lyndon patent do you or do you not consider that these claims relate to a separate branch or part of the Lyndon patent in suit as contemplating, for instance, operation of the governor and of the water gate irrespective of the by-pass, as testified in your last previous answer?

A. I do.

Q. 428. Then do you or do you not make it out that the patent contemplates in both specification and claims, both by-pass operation jointly with water gate operation and water gate operation independently of by-pass operation?

Mr. Westall: Objected to as leading.

A. Yes, sir; I do.

Q. 429. By Mr. Blakeslee: Within your conception of the invention, I wish to have it clearly understood on the record, as to whether or not you consider that portion of the invention set forth in Claim 6 of the Lyndon patent to call for operation of the by-pass valve inversely

to the operation of the water gate when the water gate moves in either direction.

A. No.

Q. 430. Within your conception of the invention, I wish to have it clearly understood on the record as to whether or not you consider that portion of the invention set forth in Claim 6 of the Lyndon patent to call for operation of the by-pass valve inversely to the operation of the water gate when the water gate moves in both directions.

A. No.

Q. 431. Do you in Claim 6 find anything which leads you to deduce that a structure embodying the language of Claim 6 aims to embody the invention, and to set up the operation of the invention moved in both directions and of the by-pass moving with it in both directions inversely.

A. I do not.

Q. 432. When you witnessed the operation of the Cottonwood plant on January 2, 1914, how did its operation compare with the operation of the several parts and features as testified to by you in this deposition?

A. Exactly as I have testified to.

Q. 433. And did you or did you not note this operation carefully as to all features of the inter-related moving parts causing the governor action?

A. I did.

Q. 434. Now, as to the operation of the governors, including the Lombard device as disclosed in Complainant's Exhibit W, was such operation the same as the operation of other examples of the same types of governors in accordance with the standard practice?

A. Yes, sir.

Q. 435. Is the operation of the governors in both the Cottonwood plant and the Division Creek plant No. 2 testified to by you, such that anyone skilled in the art can trace the movements and actions and effects of the working parts?

A. Yes, sir; by close attention and study of the devices they will become quite apparent to one skilled in the art.

Q. 436. And is such operation and action of these parts so plain to one skilled in the art that upon inspecting the same he can determine the operative effects without disjoining or separating or opening up any of the parts and devices?

A. I should say if he was very familiar with the art such would be the case. If he was merely familiar with companion arts it would not be so apparent.

Q. 437. Now, is it, or is not a fact that Claims 6 to 9, and especially claims 7 to 9 inclusive, of the Lyndon patent include or call for particular parts and combinations of parts other and further than those recited in question 66 commencing on page 30 of the record?

A. Yes, sir.

Q. 438. And the invention disclosed by the Lyndon patent in suit relates to the various aspects of a governor and governor parts? Does it or does it not?

Mr. Westall: I object to the form of the question as leading.

A. It does.

Q. 439. By Mr. Blakeslee: Can you state with reference to the Cottonwood and Division Creek No. 2

plants what the total horse power is that they are capable of generating as an outside estimate?

Mr. Westall: Objected to as not proper redirect examination, incompetent, irrelevant and immaterial.

A. I should expect each unit in the Cottonwood plant to be capable of developing not less than 1350 horse power and possibly as high as 1500. I should expect the unit at Division Creek No. 2 plant to be capable of developing not less than 1050 and possibly as high as 1200 horse power.

Mr. Blakeslee: You may re-cross.

RECROSS EXAMINATION.

By Mr. Westall:

Q. 440. Where in the patent in suit is there any suggestion that the water gate may be operated separate from the by-pass valve?

A. In Claims 1, 2, 3, 4 and 5 which are applicable to any form of gate-operative means, which might or might not be provided with a by-pass. For example, the deflecting nozzle form as illustrated in unit No. 1 on the Cottonwood plant is so operated.

Q. 441. Would you consider that deflecting nozzle type an infringement of the claims you have mentioned?

Mr. Blakeslee: Objected to as indefinite and incomplete, irrelevant, immaterial and incompetent.

A. I would want to give very exhaustive consideration to that question before answering it.

Q. 442. By Mr. Westall: I call your attention to the language of the specification on page 4 at line 40, where it is said: "When the governor acts to close the

main gate, the compensating device will open more widely the by-pass." And at line 48 where it is said: "Should the main gate open, a reverse action takes place," and I ask you to state whether or not in your opinion those two quotations do not show that Lyndon contemplated that there should be a corresponding inverse motion of the water gate and by-pass valve at all times when the water gate was opened or closed?

A. No, sir.

Q. 443. Can you explain more fully the reason for your last answer?

A. When the water gate is opened or closed no movement is taking place in the by-pass valve.

Q. 444. Is that not a direct contradiction to the language quoted, "when the governor acts to close the main gate, the compensating device will open more widely the by-pass"?

A. No, sir. I understood your question to be when the gate was open or closed. The language which you have just quoted indicates during a period of movement of the gate. By referring to that portion of the specifications commencing on line 40 of page 4, reading, "When the governor acts to close the main gate, the compensating device will open more widely the by-pass," this language indicates very clearly that it is during governor movement and states that "the compensating device will open more widely the by-pass."

Q. 445. With reference to the language at line 48 "should the main gate open, a reverse action takes place"?

A. That very clearly means that should the governor during its movement of the main gates in an opening

direction occur, a reverse action takes place. But it does not follow that the by-pass valve necessarily moves in a closing direction, because a reverse action does not necessarily mean an action exclusively of the by-pass valve, but an action of other parts which connect with the by-pass valve. The by-pass valve might easily be on its seat and still the language apply with perfect propriety—"should the main gate open, a reverse action takes place." "Reverse action" being action of the connecting part. If the by-pass valve had been in an open position, such reverse action would permit its moving toward a closed direction. But such open position of the by-pass at the commencement of the reverse action does not appear to me to be essential.

Q. 446. Is it not a fact that Lyndon shows a device that, taking it in connection with the language above quoted at lines 40 and 48 on page 4 of the patent, makes it clear that he contemplates a movement of the by-pass valve whenever the water gate is opened or closed in the action of the governor?

Mr. Blakeslee: The witness has already testified to this distinctly in his redirect examination, and I may say particularly in discussing the import and meaning of Claim 6 of the patent in suit.

A. It is clear that Mr. Lyndon contemplates a device in which the by-pass is moved in an inverse direction to the main gate when, in some cases, the water gate is moved in one direction, and in other cases where it is moved in the opposite direction. Had Mr. Lyndon intended to have made it necessary for the by-pass to move in both directions inversely to every governor

movement, he would have worded his claims very differently. I distinguish very clearly between the words "either" and "both."

Q. 447. By Mr. Westall: You have testified on redirect examination that Claims 6 to 9 disclose parts and combinations of parts other than those described in question 66, commencing on page 30 of the record. Briefly mention, without any explanatory exposition, what those parts consist of.

A. The various elements mentioned in the claims which you have just mentioned and which form no part of question 66.

Q. 448. Taking up the claims just mentioned, state specifically each element, if you will.

Mr. Blakeslee: We object to this as being mere repetition and as calling for something which appears from the record. The claims speak for themselves. The claims and the elements are capable of ready comparison with the language under discussion; and we submit that it is an unnecessary incumbering of the record to go on with this procedure.

Mr. Westall: Counsel for the defendant would inquire why the question was put on redirect examination if it was not pertinent and vital to the issues of the case.

Mr. Blakeslee: In response I will say that when a question is once put and answered it loses that vitality which is necessary to support a further question directed to the same inquiry. And the last question is further objected to as not exactly quoting the question in redirect examination referred to by counsel.

A. The several parts which are not specifically men-

tioned in question 66 to which you have directed my attention, are such as the clutch, the returning device, the water-gate-operating shaft, the controller, the driving shaft, the dynamo and such other parts. While these parts to some degree are included in the governor in the said question, some of them are not.

Q. 449. By Mr. Westall: I understood you to say on redirect examination that construed broadly the combination, inter-relation and operation and actuation of the several parts, and probably with regard to the use of the specially wound electro-magnet means, in which the voltage variations are greater than in direct proportion to the speed, rather than the specific means and arrangement of parts as disclosed in the Lyndon patent to constitute what you conceive to be the essence of the Lyndon invention. Is that correct?

Mr. Blakeslee: Objected to in such parts thereof as are not in accordance with the previous testimony of the witness.

A. No, sir. I consider that as regards the dynamo responsive to speed, that possibly there was patentable novelty in this feature also, and meant my answer to Mr. Blakeslee's question to so indicate.

Q. 450. By Mr. Westall: You considered those, did you not, the electro-magnetic means, including the specially wound dynamo, as features of novelty, did you not?

A. I believe that it is a feature of novelty in the Lyndon patent as used for governor control. It was a well known device in the electrical art, and I am very certain and know of dynamos having been so wound at

an earlier date, but not put to this new and useful purpose for controlling a governor.

Q. 451. But you do not wish to be understood as testifying that such novel feature is contained in the alleged infringing devices, do you?

Mr. Blakeslee: Objected to as indefinite.

A. No, sir; I do not allege that any such dynamo features, responsive to speed, for the purpose of operating the governor is in existence in the alleged infringing devices.

Q. 452. By Mr. Westall: You conceive the inverse action of the by-pass valve and the water gate, do you not, to be a novel feature or a novel result attained by the means disclosed by the Lyndon patent?

Mr. Blakeslee: Objected to as not proper cross-examination.

A. I consider it a novel means and combination for any governor or governing means. I believe it to have been new with Lyndon at the time of the Lyndon invention.

REDIRECT EXAMINATION.

By Mr. Blakeslee:

Q. 453. Does the Lyndon patent or does it not teach that the by-pass operates always in all governor actions affecting the water gate?

A. It does not teach that at all times it acts in connection with movements of the water gate. But it very specifically teaches the necessity for its action where inertia effects in the water column would otherwise affect the accuracy and efficiency of the water wheel governing, and, as such, is inherently new.

insert }

410 31 insert "By consent of counsel on both sides an adjournment is now taken until Monday morning, January 26, at 8 o'clock, and the witness is excused subject to appearance at that hour for further direct examination as per previous notice and reservation. Geo. J. Henry, Jr., complainant, appearing as a witness further on his own behalf, and pursuant to the notice given by counsel for the complainant herein, testified as follows:"

DIRECT EXAMINATION (resumed).

January 26, 1914. A. M. *By Mr. Blalock*

Q. 454. Have you prepared the further matter illustrative of either or both of the power-generating plants known as the Cottonwood or Division plant No. 2, testified about in your previous testimony, in accordance with my previous request on the record?

A. I have prepared such a drawing of apparatus of the No. 2 unit at the Cottonwood plant, and that portion of the governing apparatus above the floor line corresponds with the apparatus of the No. 1 unit of the Cottonwood plant, which I now hand you; and I am preparing a corresponding drawing of the Division Creek No. 2 plant apparatus.

Q. 455. Please state what method you have followed in the preparation of this drawing or blue print, as it appears to be.

A. I have taken one of the printed copies of the Lyndon patent in suit and cut into segments the Figure 1 of the drawings thereof and pasted these several parts in positions adjacent to the corresponding parts or mechanical equivalents of the apparatus shown, and as existing at the Cottonwood plant. I have also cut in to several elements and groups of elements Claims 3, 4, 6, 7 and 8, and pasted such elements or groups of elements approximately adjacent to the corresponding parts and mechanical equivalents of the drawing in question. I have adopted a means of lettering and numbering these elements and groups of elements as follows: The elements and groups of elements should be read consecutively by following the letters of the alphabet

consecutively for each claim as indicated by the number following such letter. The nomenclature is as follows: For Claim 3, A-3, B-3, C-3, D-3, E-3. For Claim 4, A-4, B-4, C-4, D-4. For Claim 6, F-6, G-6, H-6. Claim 7, F-7, G-7, H-7, I-7. For Claim 8, F-8, G-8, H-8, I-8, J-8, K-8, L-8.

Q. 456. And by means of this system of nomenclature and identification, are the elements of each claim, the number of which you have given in your last answer and located upon the blue print in juxtaposition with the elements or groups of elements of the alleged infringing structure, and the corresponding elements or groups of elements of the Lyndon patent in suit in accordance with the comparison you have made, in general conformity with the comparison you have made in your previous testimony?

A. Yes, sir; as closely as could be done without covering up structural essentials of the drawing.

Q. 457. I notice a number of fine ink lines traced over the blue print. Have these any particular significance?

A. In a few of the claims I started to draw lines from the elements or groups of elements to the next occurring elements or groups of elements as read in the claim, but I abandoned this for a red pencil designation, however, with the designation above specified.

Q. 458. I further notice that there are some portions or clippings attached to this blue print in connection with which no printed claim excerpts appear. What are we to understand as to that arrangement?

A. The drawing was susceptible of some further sub-

division than the elements and groups in the claim, and I have therefore pasted those portions of the drawing Figure 1 in some instances in slightly different locations.

Q. 459. And this, I take it, was done for the purpose of showing more happily the structural comparison of the drawing of the Lyndon patent with the construction of the said Cottonwood unit?

A. Yes, sir.

Q. 460. And these several parts of the drawings of the claims applying to this blue print, you say, was taken from the Lyndon patent in suit. I suppose they were cut from a copy of the patent?

A. From a printed copy of the patent; yes, sir.

Q. 461. And all from the same printed copy?

A. Yes, sir.

Mr. Blakeslee: We offer in evidence the blue print with its attached pasted fragments of the copy of the Lyndon patent in suit, as explained by the witness, as Complainant's Exhibit KK.

(The said blue print so offered in evidence is marked by the Examiner as Complainant's Exhibit KK.)

Q. 462. By Mr. Blakeslee: Please state further from what sources and by whom was this Exhibit KK, blue print, prepared?

A. From the exhibits in the case, Complainant's Exhibits E, F, G, X, W, U and UU, and the drawing was prepared in my draughting room immediately under my direction. I am having a similar drawing prepared of Division Creek No. 2 apparatus.

Q. 463. In connection with this Exhibit KK, I will

ask you to briefly point out the comparative operations of the means preventing the governor from overrunning.

A. The means preventing the governor overrunning consists in the alleged infringing apparatus of a dashpot and associated parts shown close to the fly balls in the upper portion of the governor apparatus, and each of the rod and lever connections to the water-gate-operating shaft, to the controller, to so receive primary motion from the controller, the returning motion taking place to restore the controller to inoperative position, said returning motion being affected through the actuating rack and pinion on the vertical stem under the action of a tension spring shown connected to the fingers pressing against each end of the rack. This returning motion is at a rate under the control of the needle valve in the proportion of the said dashpot controlling the port through which passes the oil during the movement of the dashpot with respect to its piston and piston head. This controlling rate, said control being effected through primary movement of the device from the controller, returns the controller to inoperative position so as to prevent excessive movement of the governor. This apparatus is shown in more detail in Exhibit ZZ. I might state that in the drawing Exhibit KK and Exhibit ZZ the fingers and actuating spring are shown in a vertical plane so that their action may be clearly shown in a single drawing. Whereas, in Exhibit W they are in a plane at right angles thereto, the operation being identical in either case and said operation being introduced merely for the purpose of making the operation clear in the drawings KK and ZZ.

Q. 464. You have discussed a certain portion of the Lyndon invention pertinent to the means for preventing overrunning of the governor, consisting more particularly in the elaboration of those means, preventing over-movement and jamming of the water gate and over-movement and jamming of the by-pass valve, such means being respectively controlled by the circuit breaker at 84, 85, 86 and 87, and by the circuit breaker at 74 and 75. Will you please now point out what means operate to prevent such features overrunning, or jamming, in the Cottonwood plant installation as exemplified by Exhibit KK.

A. As distinguished from the overrunning device mentioned in my last answer and which limits the overrunning even on comparatively small movement of the governor, we must in the installation of governing apparatus provide means such that when the gate arrives at either end of its stroke, at its limits, in other words, some means must be provided for preventing the governor forcing excessive stress by an effort to continue movement after such limits have been reached. Such means are provided in the alleged infringing apparatus through the limits of the movement of the plunger or piston in the operating of the governor cylinder, which when properly adjusted arrives at the end of its stroke and is limited by the piston heads to prevent such damaging stress.

Q. 465. Being what part of Complainant's Exhibit ZZ?

A. This part is shown as the cylinder and cylinder heads and piston and piston heads within the cylinder.

in Exhibit ZZ, and described thereon in red pencil as "means for operating same in either direction to govern the water wheel," and having in front of said writing the numeral 2.

Q. 466. Have you anything further which you wish to say with respect to the sequences of operation of the following elements or groups of elements disclosed in the Lyndon patent in suit, namely: First, the water-gate-operating means; second, the means for preventing over-running of the governor, and, third, the by-pass-operating means, and to the possible alteration of the order of sequence in accordance with the working conditions which may arise?

A. I might say that I have pointed out previously in my cross-examination the two new particular principles introduced into the art by the Lyndon invention. The application by Lyndon of a by-pass and a valve therein controlled by the action of the governor, said valve to be reversibly operated in combination with a water gate in either direction, is for the purpose of taking care of too decided inertia effects which take place in water supply pipe lines. The first of these and the one of most frequent and greatest importance is the prevention of water-ram or water-hammer occurring during periods of gate closure and which must be prevented during periods of quick gate movement by the opening of a by-pass. This corresponds with one of the movements described by Mr. Lyndon. The second condition arises with a long pipe line under gentle slope, where, in order to get the velocity of the water up to the requisite point in a minimum space of time, it is advantageous

to have a portion of the water velocity provided before governor movement to open the water gate takes place, and for the purpose of assisting gravity to get the water velocity up the requisite amount when the governor moves the gate in an opening direction. These two uses of the Lyndon invention are distinct and available separately and are clearly provided for in the wording of Claim 6. The other principle, that of preventing the overrunning of the governor, is entirely separate and distinct from the by-pass as used above. It is, however, an essential of almost all governors as meeting the requirement of speed regulation in hydro-electric plants today. It is to be used in combination with a governing apparatus as previously pointed out, and adjusted with especial respect to "fly wheel" capacity or inertia effects of the rotating apparatus, including the water wheel, generator and apparatus supplied by the generator. The inertia of the rotating parts of a system supplied by the water wheel are a matter of special design entirely separate and distinct and not being dependent in any way upon the inertia effects of the water in the pipe line. It is therefore obvious that in any governor plant, as compared with any other plant having different pipe lines or inertia effects of the rotating apparatus, we must be capable of adjusting our several governor elements so as to meet the requirements in each individual case. We must therefore be able to adjust our controller returning means to meet the inertia effects of the rotating apparatus. This is accomplished by an adjustment of the automatically moved valve which I have marked "may be adjusted by hand" on Exhibit ZZ, and corresponding adjustment in the Lyn-

don device may be effected by the springs 27, 28 and 29, the radius on which is set on pin 23 on the Lyndon clutch, the winding of the magnets 31 and 32, the weight of the lever arm 24, the degree of movement of the rod 43 or, most frequently, the adjustment of the contacts 45 and 46, 45A and 46A, with respect to the contact 40 and 40A, 41 and 41A. The rate of movement of the by-pass may be adjusted and its periods of engagement may be adjusted in the Lyndon device by contacts and mercury cups 100, 101, 103 and 104, and by the diameter of sheave 54 on shaft 20, or the length of the double lever 50 on by-pass valve 49. Different lengths of arms on this lever would accomplish a different rate of movement on opening or closing the dashpots. Weights 69 and 70 may also be adjusted. It will thus be seen that every adjustment is provided to meet varying requirements. There may be cases where the fly wheel element or inertia of the rotating parts is very great and where the pipe line is very short. In such cases the mercury cups 45 and 46 might well be adjusted to engage contacts 45A and 46A later than contacts 100 and 101 would engage mercury cups 103 and 104.

Q. 467. And in this connection for what purpose would you bring in the by-pass earlier than you would resultantly bring in the action of the returning device?

A. I might better say that I would delay the action of the returning device in such a case, as the stored energy of the rotating parts of the plant would make its responsiveness to speed variation slower and the governor would therefore require a slower operating device. If, on the other hand, the pipe line was quite long, the importance of the by-pass would be greater

and without changing the setting of the contacts 45A, 46A, 45 and 46 I would adjust the by-pass, for example, by putting more mercury in the cups 103 and 104 so that it would come into engagement with the contacts 100 and 101 at an earlier period and remain in engagement a longer time. If now the long pipe line were on a very gentle slope, that is, the plant operating under a comparatively small head, I would adjust the by-pass so that it would be partially open at the time the main gate was closed. This would be accomplished through the weights and dashpots 69 and 70, thus utilizing the by-pass for both directions of movement of the water gate. If, on the other hand, the pipe line were long and under a high head, so that we need not have any initial velocity of water flowing to bring it up to the requisite velocity quickly on governor movement, I would adjust the dashpot and weights 69 and 70 so that the by-pass would normally be closed or nearly closed and utilize it at the time when the water gates were moved in a closing direction by the governor to provide an adequate by-pass to relieve the pipe line from inertia effects. These various adjustments are such as would be readily made by one familiar with the apparatus and with the operation of a hydro-electric plant.

Q. 468. And how are the possibilities of such adjustment evidenced in the setting of the by-pass valve in the Cottonwood plant?

A. Such adjustment is effected in that case by the adjustment springs on the side of the dashpot, and the adjusting screws for adjusting the port ways for all passage around the piston head. The springs may be

adjusted by nuts restraining them at one end and the adjusting screws of the dashpot, as are clearly shown in photographs Exhibits E to P inclusive, and the line drawing Exhibits U and V.

Q. 469. And, again, the setting of the by-pass valve in the Cottonwood plant, as shown in said Exhibits, testified to by yourself and Mr. Scattergood, indicates what conditions in the pipe line?

A. It indicates the natural setting where the pipe line is under a high head, not requiring an initial velocity of water through the pipes.

Mr. Blakeslee: You may cross-examine.

CROSS-EXAMINATION.

By Mr. Westall:

Q. 470. Marking as you have, and in attaching to the blue print to which you have referred in your testimony, certain parts of the drawings of Figure 1 of the Lyndon patent in suit, and parts of Claims 3, 4, 6, 7 and 8, is it your intention to admit that the alleged infringing devices do not embody the mechanical equivalents of the elements and parts of elements described in Claims 1, 2, 5 and 9 of the Lyndon patent in suit?

Mr. Blakeslee: Objected to as not proper cross-examination. There has been no direct examination subject to the present cross-examination which could in any way be considered as a concession. If counsel wishes to make direct inquiry as to whether the witness wishes to make any such confession, that is a different matter.

A. No. I think the mechanical equivalents of Claims 1, 2, 5 and 9, broadly speaking, do exist as testified to by me yesterday under cross-examination.

Q. 471. By Mr. Westall: So that in the marking of the blue print referred to in the way that you have marked it, you do not wish to be understood as receding from your former testimony respecting the claims not included in the markings on that Exhibit? Is that correct?

A. I do not wish to recede from my statements under cross-examination at the last session regarding the mechanical equivalents that I have testified to as being found in the alleged infringing apparatus.

Mr. Westall: That will be all.

Mr. Blakeslee: Now, let it be noted that the present witness is excused until such time as he can produce the further blue print showing.

Mr. Westall: Before you excuse the witness, during your previous cross-examination there was a certain question reserved for your further consideration.

A. I beg your pardon. I meant to tell you about that. I might add in response to the questions which you asked me in the previous cross-examination, and for which I asked more time to give consideration, I would say that the language is partially descriptive of part of the apparatus. The same applies as an answer to the other question.

Q. 472. In what respect does it fail to be completely descriptive of the device of the patent in suit as described in Claim 6 of the Lyndon patent?

Mr. Blakeslee: The same objection and notice as made of record in connection with the putting of the question under discussion are again made.

A. I would want more time to give consideration to that question before answering.

Q. 473. By Mr. Westall: What would you add or subtract from the language quoted which, in your opinion, would make it more nearly describe the device called for in said Claim 6?

Mr. Blakeslee: The same objection.

A. I would subtract all of it and add all of Claim 6.

Q. 474. By Mr. Westall: How much further time would you need to completely answer the question?

A. If my previous answer does not completely answer your question already, and if I understand your wish that I put in other words the exact equivalent of Claim 6 which I consider a perfect description as far as the elements go of the alleged infringing devices, I might say for that purpose I would want a day or two to give consideration to such further answer.

Mr. Westall: I believe that is all.

Mr. Blakeslee: In this connection we again notify counsel that he is making the witness his own, and as time is limited for completing the making of Complainant's prima facie case, we suggest again that matters of defense be presented within the time allowed therefor.

Now, the witness is excused to return when ready to produce further blue print which he has this morning stated he is having prepared, and for such further testimony as may be required, providing the motions set for the 29th of this month are denied by the court or defendant refuses to sufficiently comply with the requests and demands and notices pertinent to such motions.

C. L. CORY, heretofore excused and instructed to return, thereupon returns and further testifies as follows upon so resuming.

DIRECT EXAMINATION (resumed).

By Mr. Blakeslee:

Q. 207. I again call your attention to the disclosures of the Lyndon patent in suit, and, particularly, to the language of Claims 3, 4, 5, 6, 7, 8 and 9, and I will ask you to state from such disclosures what you gather to be the import thereof with respect to the relations between the water gate and by-pass, with respect to the movement thereof, and I might more particularly state this in this way: you have testified that the gate moves at certain times in regulating or governing, and that the by-pass moves at certain times in regulating or governing. Please now state what your comprehension of the Lyndon patent disclosure is as to these things with relation to each other.

A. The disclosure of the patent in suit, particularly as indicated in Claims 3, 4, 5, 6, 7, 8 and 9, indicate that the motion of the water gate and the motion of the by-pass valve is controlled by a controller, which controller is responsive to changes in the speed of the water wheel, and that means are provided to return the controller to normal position and stop the governing action prior to the time that the same has overrun the proper amount, or to prevent excessive movement of the governor; that the operation of the controller which is responsive to speed is such as provides means for operating the water gate in either direction and also for operating the by-pass inversely or contrariwise to the direction in which the water gate is operated. By "direction" I mean with reference to whether the respective valves—the water gate valve and the by-pass valve—are operated toward

a closed position or to wide open position; and also that means are provided as disclosed in the patent for allowing the by-pass valve to return to normal position after governing action is completed. Means are also provided as disclosed in the patent for holding the by-pass valve normally in a partly open position if desired, and means are provided to operate the by-pass valve in either direction, and also means provided for returning the by-pass valve to normal position after the governing action is completed upon the water wheel. Or, to put it in another way, a controller is provided responsive to changes of the speed of the water wheel. The action of this controller is such as to provide means for moving the water gate in either direction to govern the water wheel; that the operation of the water gate and the valve controlling the by-pass is such that they will be respectively moved inversely, and that after the governing action is completed means are provided for returning the by-pass valve to its normal position.

Q. 208. Referring again to said enumerated claims of the Lyndon patent, 3 to 9 inclusive, I call your attention more particularly to the language of each of the same which states generally that the water gate and the water-gate-operating shaft are moved in either direction. What do you take ~~the~~ broad import of that language to be?

A. I take the import of that language to be that the water gate may be moved either so that it will increase the opening through which the water supply ^{you} to the wheel for driving the same, or the water gate, may be opened so as to decrease the size of the opening through which

the water supply for the operation of the wheel goes. That means are provided therefor for operating the water gate in either direction to govern the water wheel.

Q. 209. Now, when it comes to the operation of the by-pass valve and the operation thereof inverse to the operation of the water gate, as, for instance, set forth in Claim 6, do you take it to follow that the patent in the disclosure preserves this same distinction last made or the contrary?

A. The disclosure of the patent is such as to indicate that the operation of the governing mechanism is in accordance with the distinction last made, since in Claim 6 it is distinctly set forth that in combination with a water wheel means are provided for operating the water gate in either direction, and also means that are connected to the water gate operating means that operate the by-pass inversely to the operation of the water gate.

Q. 210. Now, supposing his Claim 6, for instance, had employed the words "both directions" in substitution for the words "either direction" which appear in line 3 of the claim. What change, if any, would you consider this change of language to make in the import of the claim and the invention as stated thereby?

A. In Claim 6 if the words "both directions" were substituted for the words "either direction" in line 3 of that claim, which is line 63 on page 5 of the patent, I would interpret that change in wording to restrict the disclosure to operating the water gate both toward the closing position and toward the opening position and the operation of the by-pass valve by means connected to the water gate operating means in an inverse direction to that which the water gate is operated.

Q. 211. And in both directions inversely?

A. No; not inversely.

Q. 212. I mean in my last question, going back to the original wording of the claim,—I am asking whether with the substitution of the words “both directions” for the words “either direction” in line 3 of Claim 6, if, as you have just testified, the claim would mean that the water gate is to be moved in both directions, the operating means would likewise be understood as moving the by-pass in both directions inversely, or what do you make out as to this?

A. Not necessarily. Because the disclosures of the patent clearly set forth this fact: that the means that operate the by-pass valve are connected with the water-gate-opening means, and it does not necessarily follow with the use of the words “both directions” instead of “either direction” that the means connected to the water-gate-opening means might or might not simultaneously operate the water gate inversely to the operation of the by-pass valve. But, as I interpret the disclosures of the patent, the use of the word “either” gives a broader use for the devices as disclosed in the patent, since by operating the water gate in either direction, and since the by-pass valve is operated by means connected to the water-gate-operating means, that necessarily the water gate and the by-pass valve will be operated inversely. The distinction is clear in this: The operation of the by-pass valve is not due to the operation of the water gate. The operation of the by-pass valve is due to the same means that is connected with the water-gate-operating means. In

other words, the same means operates both the water-gate-operating and the by-pass valve.

Q. 213. Now, in view of the use of this language relating to operating the water gate in either direction, supposing you encounter a construction embodying the invention in which the water gate and the by-pass operated together only in the closing direction of the water gate during governing, and likewise encounter another construction in which the water gate and the by-pass operated together only in opening of the water gate in the governing action. Would you draw any distinction between these two cases in reading the language of Claim 6?

A. Yes, sir; because in the cases that you have indicated the water gate would not be operated in both directions but would be operated in but one direction or possibly in either direction, but they would not be operated in both.

Q. 214. You do not find the word "both" in Claim 6, do you?

A. I do not.

Q. 215. It is for that reason that I have asked you whether you would draw any distinction between the constructions in which, in one case, the by-pass and water gate operate simultaneously with the movement of the water gate only in one direction, and another case in which the by-pass and water gate move simultaneously only in the operation of the water gate in the other direction.

A. I would draw absolutely no distinction, as actually set forth in Claim 6 where the words "either direc-

tion'' are used. There is absolutely no distinction in the cases you have given, but there would be a distinction if the words ''both directions'' were used, most certainly. Because in the two cases you have indicated you would by the restriction set forth allow the operation of one gate to be in only one direction and not in both directions.

Q. 216. That is, the operation of the water gate jointly with the by-pass as stated in my question?

A. Yes, sir.

Q. 217. Then am I to understand that in accordance with your comprehension of the import of said Claim 6 of the Lyndon patent either of the cases which I have put would come within the reading of said claim?

A. Yes, sir; not only that claim, but in every one of those claims where invariably you find the equivalent of the expression ''operating the water gate in either direction.''

Q. 218. And that applies to all of Claims 3 to 9 which I first mentioned, does it? Of course, leaving out of consideration the by-pass when dealing with Claims 3 and 4, which do not specify a by-pass.

A. Yes; but there is in Claim 3, line 3, the words ''operating same,'' referring to the water-gate-operating shaft ''in either direction.'' In Claim 4, line 4 and 5 of that claim ''adapted to turn the water-gate-operating shaft in either direction.''

Q. 219. That I understood. But I mean in such of those claims in which no by-pass itself is specified.

A. The by-pass itself is specified in Claim 6 as above indicated.

Q. 220. I mean does your answer with respect to the differentiation between "both" and "either" apply to the other claims, such as 3 and 4, in which a by-pass is not specifically set forth?

A. No. Where mention of the by-pass is not made the distinction would not apply, but would apply in Claims 6, 7 and 8 where the words "either direction" are to be found in connection with the operation of the water gate and it is set forth that the by-pass is operated inversely to the control of the water gate.

Q. 221. Now, as to those claims in which that inverse operation of the by-pass is not specifically set forth, such as Claims 3, 4, 5 and 9, but in which the language "either direction" is employed with respect to the operation of the water gate, in so far as that language is controlling, would you or would you not draw a corresponding distinction as between the same and the language "both directions"?

A. I do not know how to answer your question any better than by saying the use of the words "either direction" certainly does not mean "both directions." They cannot possibly be interpreted to mean the same thing, because they did not. And, further, Claims 3, 4, 5 and 9 clearly, to my mind, will allow the operation of the water gate in either direction as is stated without necessarily at the same time the operation of the by-pass valve. The by-pass valve may be not simultaneously operated, or may not be operated at all. Now, every one of these claims specifically states the combination of a water-gate-operating shaft and means for operating the same in "either direction," and if any

kind of a device is provided for the operation of the water-gate-operating shaft in either one direction or the other, it is specifically in accordance with the specifications of the claim. But the use of the words "both directions" naturally would not include a mechanism to be operated in one direction only, but the words "either direction" include the device even if only operated in one direction.

Q. 222. I think that clears that matter. Now I will call your attention to Complainant's Exhibit W and ask whether you are acquainted with any such apparatus.

A. I am. I have been acquainted with the device for some time.

Q. 223. Can you state what such apparatus is known as in the art or in the trade?

A. I do not know that I can give it any particular trade name except that I know for what use it is employed in governing mechanisms, particularly for water wheels.

Q. 224. Have you ever seen such a device installed in connection with a water wheel?

A. I have—a number of them.

Q. 225. What is its general purpose in such installations.

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. I should say its purpose is in general to accomplish the following very desirable action in a water wheel governor: after the water gate has been presumably or approximately moved to position required for the return or regulation of the normal speed, it is desir-

able to have that water gate stay in that position until, if the water gate has been moved exactly in the right position, it will stay there and not be moved any further by action of the governor mechanism until normal speed has been restored. And that is the object of this mechanism, to so adjust itself with the controlling device which is responsive to change of speed so that normal conditions can be restored in reference to the operation of the entire system without causing the water gate valve to be further operated upon due to a movement of the controller out of its normal position.

Q. 226. Does this device accomplish that purpose?

A. It certainly does.

Q. 227. Please look among the blue prints upon the table and see if you can find any print in which there is a representation of such a device, and give us the identification of the blue print.

A. On Complainant's Exhibit ZZ.

Q. 228. How upon that blue print is this device designated?

A. Well, it is designated, I should say, by the words "automatically controlled returning dashpot." It is under the control absolutely of the governor which is operated due to changes in speed of the main water wheel shaft.

Q. 229. Now, assuming that the several other features of this blue print correctly represent features which will operate in accordance with the general broad designations applied to them in red lettering, I will ask you if upon consideration—and you may take such time to consider as you wish—you can state the mode of oper-

ation and the functions of this automatically controlled returning dashpot shown therein. In the first place, I will ask you if this showing on the blue print has any particular name in the art or trade—that is, the whole combination of the parts represented here.

A. Do you mean commercial or technical name?

Q. 230. Commercial preferably.

A. I regard this as representing the aggregate of the devices commonly in use for the regulation of the speed of water wheels as developed in the so-called Lombard governor which is connected to the water gate valve and nozzle; also a by-pass valve for such water wheel.

Q. 231. Please look at Complainant's Exhibits E to L and state if you find therein any representation of such a Lombard governing device and, if so, please point the same out by any reference letters you find on such photographic exhibits.

A. On Exhibit J I find the photograph of a governor mechanism including the parts. Fly-ball element CC is responsive to variations in speed of the main water wheel. On Exhibit C the dashpot labeled "dashpot," the adjustable screw YY on both Exhibits J and K—

Q. 232. My question is as to the whole governing device of the Lombard governor and not necessarily the dashpot.

A. The governor broadly is represented by the photographs Exhibits J and K.

Q. 233. Specify the parts.

A. The pulley DD which is maintained at the same speed as the main water wheel shaft; the governing

mechanism is also shown on Exhibit G. Is it your desire that I shall try to name all these various things all the way through?

Q. 234. No; just the parts so and so.

A. You don't want me to try and name every one of them?

Q. 235. No. Point them out by the designating letters.

A. Referring to Exhibits J, K and H, I note the parts of the governing mechanism, as before stated, CC, DD, UU, ZZ, XX, VV, EE, FF, II, PP, LL, KK, NN, SS, MM, TT, AA. On Exhibits E and G the following letters, referring to the various parts of the governing mechanism: I, A, K, L, M, G, H, F, D, E, X, Z.

Q. 236. Now do you find in these several photographs the counterpart of the governing device shown in Complainant's Exhibit ZZ?

A. I do.

Q. 237. Will you please now state briefly the operation of this governor device shown in Complainant's Exhibit ZZ, and it may assist you to abbreviate it by referring to the several parts substantially in the language of the notations on the blue print where you can do so.

A. Referring to Complainant's Exhibit ZZ, the fly-balls CC are affected by change of speed of the main water wheel through the main driving shaft. The operation of the fly-balls will operate the controller through the stem YG so as to move it away from its normal position when the speed of the main water wheel for any reason changes to other than normal. The controller then acts through a means which is labeled "operating

cylinder," and which is really a means for operating the water gate in either direction, or, if desirable, a combination of a water gate and a by-pass valve, the result being that a change in speed will cause the position of the water gate to be modified. The automatically controlled dashpot is in reality a returning device controlled by the controller which will on returning to its normal position keep the position of the water gate constant until the speed has readjusted itself in the main water wheel to normal, or until it has adjusted itself approximately to normal, at which time the controller will again if necessary make a further adjustment of the water wheel opening. The operation of the automatically controlled returning dashpot which is controlled through the controller is to maintain the position of the controller in a normal position until the speed has returned to normal. This is accomplished through a clutch bar operating at ZZ which allows the returning dashpot to return to its original position at just the proper rate during the time of its movement, so that the controller itself will not be moved from its normal position, due to the change of the position of fly-balls as the speed is being adjusted to normal. Further, the automatically controlled returning dashpot will operate to accomplish this result in exactly the proper manner in both of the following cases: If the operation of the governor has been to reduce the speed due to its having been previously increased because of a reduction of the load on the water wheel, or, vice versa, if the operation of the governor has been to increase the speed due to an increase in the load on the water wheel. I wish it understood that what I have said in regard to

the operation of the automatically controlled returning dashpot is due primarily to excessive or large and sudden changes of speed, and the operating of the governor therewith, rather than necessarily to very slight modifications of speed from normal for any reason.

Mr. Westall: Counsel for defendant calls the attention of the court to the fact that in the foregoing testimony of his witness he has had before him Complainant's Exhibit ZZ which, upon the previous examination of Complainant were marked by Complainant in red pencil what he conceived to be the mechanical equivalents of certain of the elements of the claims in suit, and that therefore the testimony of this witness should not be entitled to the weight that it would otherwise be entitled to if the witness were testifying from a drawing which had not been so marked.

Mr. Blakeslee: The very question admitted the marking of this drawing, and the question was not directed at comparing this structure with the Lyndon patent or any disclosure thereof, but it was merely directed at the operation of this governor device.

Q. 238. Now, in the action of such governor what can you say as to the rate of movement of the fly-balls during their inward and outward play?

A. The fly-balls are returning to their normal position there, but with movement during the early part of their return at a comparatively rapid rate. That rate will become slower and slower till it will be a minimum just before they come to their final and normal position. While on the other hand, if the fly-balls are being thrown out, due to an increase of speed, the rate at which they

will be thrown out will be greater during the first part of the travel of the fly-balls, such rate becoming less and less as they tend to get to their position furthest out.

Q. 239. Now, have you anything to say as to the relation between this varying rate of travel of the fly-balls and the action of any parts of the governor which you are describing with reference to Complainant's Exhibit ZZ?

A. Yes, sir; I have this to say: that is, that the returning of the fly-balls to position corresponding to normal speed, being at a varying rate during their time of travel, the action of the automatically-controlled returning dashpot due to either detention or compression, depending on which direction is traveled, the controlling springs will be such that the rate at which the balls move to their normal position will be exactly equalled or compensated for by the relative motion of the automatically-controlled dashpot to its normal position, connected with the rack that is in mesh with the gear pinion UU-J.

Q. 240. With what spring action, as indicated in Exhibit ZZ?

A. A spiral spring.

Q. 241. And having what action in the exertion of its spring quality?

A. It tends to move a rack that is geared with a pinion UU-J. It is a means of transmitting motion to that rack.

Q. 242. What I mean more particularly is, how would you define that spring itself, taken with respect to the exertion of its spring quality?

A. It is the means for returning the rack to its normal position. The work which you have done on the spring when either compressing it or extending it is utilized to return the gear, under control, however, of the controller, to normal position.

Q. 243. In other words, it always works to restore the rack to a normal position?

A. It does, yes, no matter in which direction the rack may have been moved.

Q. 244. Please now describe how the automatically-controlled returning dashpot operates in conjunction with the returning device and the controller or controller valve.

Mr. Westall: Counsel for the defendant again suggests that if some other drawing or representation of the devices inquired about are presented to the witness instead of the one previously marked by the witness Henry, that the weight of the testimony of this witness would be greatly increased.

A. I am perfectly willing to testify from any blue print so it is lettered to refer to the different parts. The writing on this blue print has no effect on my testimony whatever. The controller or controller valves move so as to place the water gate mechanism in motion due to a change of speed of the main water wheel transmitted to the fly-ball governor. If the movement of the water gate required is excessive, due to sudden or excessive change in the speed, the automatically controlled or returning dashpot will be moved, since it is directly connected with the means for operating the water gate, marked GG-H on the blue print, so that the clutch bar will

be raised on its seat ZZ, which will in turn raise the adjustable pin YY, allowing freedom of motion for the oil between the piston of the dashpot and the cylinder of the dashpot, thereby increasing the rate at which the dashpot itself will be returned to its normal position by the action of the spiral spring which transmits its action to the rack geared with the pinion UU-J on the stem of the controller. The action of the automatically controlled returning dashpot is such that the fly-balls will return at a rapid rate at first, but at a constantly decreasing rate, until they arrive at their final position, co-incident with the operation of the automatically controlled dashpot due to closing up of the orifice through which the oil may pass, due to the dropping down of the adjustable pin YY to its seat as the result of the movement of the clutch-bar to the lowest point at which it may rest in its slot ZZ.

Q. 245. By Mr. Blakeslee: And how does this joint action of the fly-balls and the dashpot affect the movement of the controller valve?

A. It maintains the controller valve in a neutral position so that the water gate is not again moved until it is required to be moved by a position of the fly-ball governor out of normal position, corresponding to the normal speed.

Q. 246. And if this ratio were not obtained between the more rapid movement of the fly-balls and the correspondingly more rapid movement of the dashpot and of the rack and pinion, what would result with respect to the controller valve and the second action of the governor upon the water wheel?

A. The controller valve would be moved from its neutral position and the governing mechanism might be such as to overrun and move the gate valve either further open or further closed than required by the change of load. This device absolutely prevents the governor from overrunning, as I have described it.

Q. 247. What do you consider the effect of this operation of the governor to be with respect to good governing action?

A. In my experience you could not possibly even get satisfactory governor action at widely varying speed due to sudden changes of load, without this mutually actuating device, namely, the automatically operated dashpot which is always under the control of the controller and the position of the fly-balls as affected by the speed of the wheel itself.

Q. 248. I show you Complainant's Exhibit X and ask if you find therein anything which relates to any of the features of the governor shown in Complainant's Exhibit ZZ which you have been discussing.

A. I find in Figure 30, 31, 33, 34 and 35 the various portions of the mechanism regarding which I have been testifying.

Q. 249. Now, please look again at Complainant's Exhibit W and state if you find any differences between what you find there and the corresponding parts of Complainant's Exhibit ZZ.

A. I find no essential differences whatsoever except, possibly, the representation of the spring and rack upon the drawing are shown vertically instead of, as they actually are constructed here, horizontal. The parts

of Complainant's Exhibit W are there represented upon Complainant's Exhibit ZZ in substantial consideration with the rest of the mechanism.

Q. 250. The rack is in the same plane?

A. Yes, sir; but the spring and controlling fingers are not.

Q. 251. Does that make any essential difference at all?

A. None whatsoever.

Q. 252. Now, I will call your attention to Complainant's Exhibit KK, not for the purpose of comparing the same with the drawings and specifications of the patent in suit, but simply for the purpose of comparison with Complainant's Exhibit ZZ, W and X, and I will ask you if you find shown in this Exhibit KK any of the features shown in those other three exhibits.

A. Referring to Exhibit KK I do find therein set forth upon the blue print itself the various devices that are in part upon each exhibit set forth in Complainant's Exhibit ZZ, W and Complainant's Exhibit X.

Q. 253. At what part of the blue print are these shown?

A. They are shown upon the main blue print itself. Complainant's Exhibit W is represented toward the upper part of Complainant's Exhibit KK. Complainant's Exhibit ZZ is reproduced upon the upper portion of Complainant's Exhibit KK, and Complainant's Exhibit X, especially Figures 30, 31, 33, 34 and 35, are shown on the upper portion of the blue print, being Complainant's Exhibit KK.

Q. 254. Is the construction of this blue print KK

clear to you as to its connection and the resultant operation of the parts?

A. It is.

Q. 255. Do you find any material differences between the showing therein and the construction and operation of the features disclosed in Exhibit ZZ, W and X?

A. No, I do not, with the possible exception that Complainant's Exhibit ZZ might be thought of, as testified, to operate horizontally, while KK represents a device to normally operate vertically.

Q. 256. And what particular part is vertical in one and horizontal in the other?

A. The means for operating the water gate is represented as operated horizontally in ZZ and vertically in Complainant's Exhibit KK.

Q. 257. Referring now to Complainant's Exhibit U and V, do you find in Complainant's Exhibit KK any representation of what is shown generally in either of the same?

A. I do find on the lower part of the blue print Complainant's Exhibit KK a substantial reproduction of the parts as shown upon Complainant's Exhibit U and V.

Q. 258. Referring to Complainant's Exhibits E to L, can you draw any comparison of what is shown therein and what is shown in Complainant's Exhibit U and V, to what is shown in Complainant's Exhibit KK?

A. Referring to Complainant's Exhibit H, I, J, and K, and Complainant's Exhibits E, G and F, I find the various parts represented on Complainant's Exhibit KK, or the different parts of the governor mechanism which

I identified, as also being shown on Complainant's Exhibit KK, are shown by letters and lines drawn indicating the component parts of the governor mechanism as shown in the photographs.

Q. 259. And these parts of the governor mechanism are the same as those which you just previously testified to in examining the photographs?

A. Yes, sir.

Q. 260. Now, Mr. Cory, as to any contradictions, if any exist, as between any parts of your testimony, which statements do you wish to stand as final—the earlier or latter statements?

A. If there be such apparent or real conflicting statements in my testimony, I should wish to have the later statements to be understood as my testimony, since in the attempt to formulate an answer to an involved question, either the wording that I may have used may have been incorrect, or my interpretation of the meaning of the question may have been erroneous; and I therefore wish to have understood as my testimony the later statements that may be so made, if such conflicting statements may be found in my testimony.

Q. 261. Considering broadly and finally the invention of the Lyndon patent in suit and also the disclosures of Exhibits E to L inclusive and blue print Exhibit KK and blue print ZZ and the device Exhibit W, and the drawings U and V, are you able to draw any distinction as between the disclosure of the invention of the Lyndon patent in suit and the general mode of operation and results obtained in the operation of the mechanism as portrayed in the other exhibits?

A. There are no distinctions whatsoever as to the results accomplished as affected by a change of speed in the water wheel shaft in the disclosures of the Lyndon patent as compared with the Complainant's Exhibits which you have mentioned in your question.

Mr. Blakeslee: You may cross-examine.

CROSS-EXAMINATION.

By Mr. Westall:

Q. 262. Counsel has inquired particularly with reference to the claims other than Claims 1 and 2 of the patent. Do you fail to find in the alleged infringing devices as represented by the blue prints and photographs about which you have testified, the mechanical equivalents of Claims 1 and 2 of the patent?

Mr. Blakeslee: It is to be noted that the last question put to the witness on direct examination was pertinent to the entire disclosure of the Lyndon patent in suit.

A. No; I do not so claim to find.

Q. 263. By Mr. Westall: So that if I have understood the purport of your testimony, you find the mechanical equivalents of all of the claims of the Lyndon patent in suit in the alleged infringing illustrations about which you have testified?

A. No; I do not find the equivalent—actual physical structures—but I find the mechanical equivalent of the results and operations obtained. For instance, I do not find a dynamo which is specifically stated in Claim 1, but I find in Complainant's Exhibits the mechanical equivalent in the resulting operation.

Q. 264. So that what you find is really an equival-

ence in result rather than means?

A. Well, equivalence in result and equivalence in means in obtaining that result. But in the physical equality of the means themselves, I do not so find.

Q. 265. What part or parts do you understand are meant by the reversing clutch gear mentioned as elements in Claims 1, 2, 4 and 5 in the patent in suit?

A. Parts 9 and 10 and 11, being bevel gears, and sleeve 13, friction discs 13A and 13B, adapted for moving the water gate in either direction.

Q. Please point out where, if at all, you find in any of the alleged infringing devices a clutch-gear adapted to connect the water-gate-operating shaft to the driving shaft in reverse driving relations, as described in Claim 1 of the Lyndon patent?

A. I do not find in Complainant's exhibits the physical equivalent of the reversing clutch-gear; but I find the equivalent as far as result is concerned in the—

Q. 267. (Interrupting). Counsel for defendant suggests that in making answers to these questions the witness do not refer to Exhibit KK which has been marked by the witness Henry on his prior examination, and it is believed that the testimony given without any such reference to such exhibit be of much greater weight than if the witness is permitted to follow the suggestions made by the witness Henry in his prior examination.

Mr. Blakeslee: We will suggest to the witness that he refer to photographs E to L.

A. If it is proper to go on the record, the witness would like to say that he does not intend at all to refer to Complainant's Exhibit KK, and is perfectly willing

to refer to any representation which can be interpreted. I do not find, however, the photographs in all cases so clear as to be able to pick out the various parts as may be required by the question.

Mr. Blakeslee: Let the witness refer to any parts that he may find in these photographs. We would rather have the photographs used if you can use them.

A. All right, but I am afraid I will make errors in picking out the various parts. Referring to the blue print which is a duplicate of the blue print used in making KK, and which I have marked KKK, there being no marks whatsoever on blue print KKK, I indicate by the capital letter A the equivalent of the reversing-clutch-gear adapted to operate the water-gate-operating shaft in either direction upon the device which is represented upon blue print KKK, being a cylinder with a piston therein capable of being operated in either direction.

Q. 268. By Mr. Westall: Do you include any other parts than the cylinder casing and the piston as the equivalent of the reversing-clutch-gear mentioned in the last question?

A. No; I include nothing more than the cylinder with its inlet valves, and so on—the cylinder in the comprehensive sense.

Q. 269. By “its inlet valves” do you include anything but merely the openings of those valves, or what other mechanism?

A. I do not include any valves, because there are none. There are pipes.

Q. 270. Do you include the pipes?

A. To either end of the cylinder.

Q. 271. How much of the pipes do you include?

A. It includes the pipes that enter in the cylinder walls or the openings in the cylinder. I could answer that question best by saying that I include nothing but the cylinder as ordinarily understood, with its attachments and the piston operating therein.

Q. 272. Is it not a fact that the clutch-gear mentioned in the immediately preceding questions perform two functions: one, to act as a sort of ^acoupling link between two shafts, and, the second, as a vehicle through which energy is imparted to move other parts? Is that correct?

A. Well, if a coupling link is supposed to be equivalent to a clutch, the reversing-clutch-gear does perform those two functions.

Q. 273. Does the cylinder with its piston which you have pointed out perform those two functions?

A. As far as the resulting motions is concerned, yes. Because the piston within the cylinder may remain perfectly stationary, no matter how rapidly the main water wheel shaft rotates, just the same as the gear 11 may remain stationary, no matter how rapidly the water wheel shaft rotates.

Q. 274. To what part is the piston in the cylinder more closely analagous in the parts you have heretofore mentioned?

A. It is perhaps more closely analagous to the bevel gear 11, because when the bevel gear 11 is caused to operate the result is a direct action in either opening or closing the water gate, exactly the same way when the piston within the cylinder which I have marked A

operates; the result is an opening or a closing of the water gate.

Q. 275. Can the part or parts which you have pointed out as being the mechanical equivalents of a "reversing clutch-gear" be described as "being adapted to connect the water-gate-operating shaft to the driving shaft in reverse driving relations" within the meaning of Claim 1 of the patent in suit?

A. Yes sir; because that is exactly what the piston A within the cylinder A does do.

Q. 276. The piston A you say does that?

A. The piston within the cylinder A. The motion of the piston A within the cylinder performs every function that is performed by the bevel gear 11 with the reversing clutch-gear.

Q. 277. Can said parts that you have pointed out as the reversing clutch-gear be described as being adapted to turn the water-gate-operating shaft in either direction within the meaning of Claim 4 of the patent in suit?

A. Yes, sir.

Q. 278. Can it properly be said that the water-gate-operating shaft is turned in the alleged infringing devices in the same sense that the operating shaft is turned in the patent in suit?

A. Yes, sir; in exactly the same relation. Because in the operation of the Lyndon patent it is quite possible that bevel gear 11 will be moved very slowly in order to operate the water gate to a sufficient degree. Just so it is possible that the motion of the piston A will be moved relatively slowly in order to operate the shaft or rotate the shaft.

Q. 279. I don't believe you understood my last question.

(The question is read by the Examiner.)

A. Yes, sir; in both cases the water-gate-operating shaft is turned. It is rotated.

Q. 280. Which part do you mean as the water-gate-operating shaft?

A. In the Lyndon patent I think it is so described as shaft 20. Yes. That would be my understanding from the description. It is shaft 20.

Q. 281. Please point out in the patent in suit what part or parts you understand are meant by "means for reversely controlling the operation of such clutch-gear" as used in Claim 1 of the patent in suit?

A. Means for reversely operating such clutch-gear consists of electro-magnets 15 and 16 which may be made to attract their armatures 17, thereby engaging friction discs 13A or 13B, so as to either rotate gears 9 or 10, the direction of rotation of the water-gate-operating shaft depending upon whether clutch-gear 9 or clutch-gear 10 is made to operate with shaft 6.

Q. 282. I will ask you now to briefly indicate where, if at all, you find an element or elements in any of the alleged infringing devices which could be appropriately described as "means for reversely controlling the operation" of the parts which you have pointed out as being the equivalent of said reversing clutch-gear, within the meaning of said Claim 1.

A. The means for reversely operating the piston within cylinder A is the controller cylinder with its pair of pistons which I mark B. This controller being oper-

ated by a variation of the speed of the main water wheel which will change the position of the fly-balls of the governor, which latter balls are marked C, in the same manner as the operation of the speed of the main water wheel shaft in the Lyndon patent through the dynamo 8 and the coils 15 and 16 and the clutch-gear consisting of loose bevel gears 9 and 10 are caused to mesh with bevel gear 11.

Q. 283. In your opinion is the "electro-magnetic means controlling such clutch-gear" called for in Claim 2 of the patent, the exact equivalent of the "means for reversely controlling the operation of such clutch-gear" pointed out in the alleged infringing devices?

A. "Means for reversely controlling the operation of such clutch-gear", as called for in the patent in suit, are not the physical equivalents of the means called for in the alleged infringement. But in their operation the means are identical in the two cases.

Q. 284. By "being identical" do you mean that they effect the same result?

A. Yes, sir; they serve the same purpose and accomplish the same thing.

Q. 285. Do you find in the alleged infringing devices any such "electro-magnetic means controlling such clutch-gear"?

A. I find no electro-magnetic means whatsoever in the alleged infringements.

Mr. Blakeslee: Again the Complainant concedes that there is no electro-magnet shown in the alleged infringing structure.

Q. 286. By Mr. Westall: In your opinion does Claim

2 mean the same, so far as its application to the alleged infringing devices is concerned, with the word "electro-magnetic" stricken out?

A. As I understand, it would not mean the same in the sense that it is to be understood as set forth in Claim 2, that the means controlling such clutch-gear is to be amplified by stating that the means are electro-magnetic means, while in the alleged infringement the means are not electro-magnetic, and that term would therefore not be interpreted as meaning fully the same as if the words "electro-magnetic" were left out.

Q. 287. But, so far as your application of the equivalence of the two structures is concerned, whether the word "electro-magnetic" is left in the claim or not makes no particular difference? Is that not correct?

A. It makes no difference in the result of the operation of the device as to what kind of means is adapted, whether electro-magnetic or mechanical.

Q. 288. Please point out where, if at all, in the alleged infringing device you find "a dynamo connected to be driven from the water wheel and wound to maintain constant potential for varying currents therein, but to vary the potential in a greater ratio than the speed", within the meaning of Claim 1 of the patent in suit?

A. I find no such dynamo in the alleged infringement

Q. 289. Do you find its mechanical equivalent?

A. I do.

Q. 290. Please point out in the alleged infringing devices where you find its mechanical equivalent.

A. The mechanical equivalent is the governor balls, the position of these balls and the mechanism connected

therewith being affected in exactly the same way as the change in speed in the main water wheel shaft affects the electro motive force of the dynamo in the Lyndon patent.

Q. 291. Please point out in the drawings in the patent in suit the part or parts which you understand are meant by "an electro-magnetic device connected to such dynamo and controlling the clutch-gear-controlling means", as called for by Claim 1 of the patent in suit?

A. Electro-magnet 33.

Q. 292. Still referring to the same language quoted in the last preceding question, please point out the part or parts of the Lyndon patent which you conceive to be the "clutch-gear-controlling means" in the Lyndon patent in suit.

A. Indicating the clutch-gear-controlling means in the Lyndon patent, I would say that the controlling means was the electro-magnet 33 with its core 34, in the link 35 and the lever arms 26, the electrical contacts 40 and 40A, and 41 and 41A.

Q. 293. Referring now to the alleged infringing devices as illustrated, where, if at all, do you find an electro-magnetic device connected to such dynamo and controlling the clutch-gear-controlling means as called for in said Claim 1 of the patent in suit, or its mechanical equivalent?

A. I do not find such electro-magnetic device, but I find the equivalent in the controller cylinder and its pair of pistons that I have previously marked B upon the blue print KKK.

Q. 294. What part or parts in the alleged infringing

device do you conceive to be appropriately described as "clutch-gear-controlling means?"

A. The equivalent of the clutch-gear-controlling means of the Lyndon patent is to be found in the controlling cylinder with its pair of pistons operating therein, which I have marked B on the blue print KKK.

Q. 295. Can the parts which you have just pointed out as being the mechanical equivalent of the electro-magnet device as called for in said claim one, be said to be controlling those parts which have been pointed out as being the mechanical equivalents of the clutch-gear-controlling means of said Claim 1?

A. Yes, sir; in exactly the same manner and with the same result.

Q. 296. Please point out in the Lyndon patent in suit the part or parts which you understand in Claim 1 are "means for resisting the action of said electro-magnetic device".

Mr. Blakeslee: Objected to as incomplete, without the portions of said Claim 1 which clearly qualify this phrase.

A. Springs 37-38 and 27-28 and 29, and also springs directly underneath magnet coils 15 and 16, but which are not lettered.

Q. 297. By Mr. Westall: Please point out where, if at all, you find "means for resisting" the action of the parts which you have designated as the mechanical equivalents of said electro-magnetic device, within the meaning of Claim 1 of the patent in suit, in said alleged infringing device, or where, if at all, you find their mechanical equivalents.

A. The mechanical equivalent for resisting the motion

of the action is to be found in the alleged infringement by the pressure fluid contained and capable of being admitted and discharged within the controlling cylinder B.

Q. 298. Can it be said that the parts you have pointed out as the mechanical equivalent of "means for resisting the action of said electro-magnetic device" resist the action of the parts which you have pointed out as being the equivalents of said electro-magnetic device in such manner that at normal speed the parts that you have pointed out as the mechanical equivalents of the "clutch mechanism" will be disengaged, but on increase or decrease from normal speed the parts you have pointed out as the mechanical equivalents of the "clutch" will be operated to govern the water gate through its operating shaft as described in Claim 1?

A. Yes; I find the mechanical equivalent in the alleged infringement, since the word "disengaged" as used in line 125 of page 4, of Claim 1, corresponds exactly to the condition when the pair of pistons in the controlling cylinder prevent either the inlet or the outlet of oil to the cylinder A as marked on KKK.

Q. 299. Is there is disengagement in the same sense as used in the patent in suit?

A. There is; exactly in the same sense, the word "disengaged" in Claim 1 referring to the conditions set forth in the Lyndon patent in the reversing clutch-gear is not moving the water gate thereof, and in exactly the same way in the alleged infringement the means tending to operate and to rotate the shaft of the water gate is disengaged in operating.

Q. 300. What part do you understand is meant by

the language of Claim 2, "a solenoid connected to said dynamo" in the Lyndon patent?

A. Solenoid 33.

Q. 301. Where, if at all, in the infringing devices do you find the solenoid or its mechanical equivalent?

A. I find no solenoid but I find its equivalent in the pair of pistons marked B on blue print KKK.

Q. 302. The sole function of solenoid 33 in the patent in suit is make and break certain electrical circuits, is it not?

A. Yes, sir.

Q. 303. Said solenoid does not move either the water gate or the by-pass valve. Is that correct?

A. Correct.

Q. 304. Its only function is to make such connections as will permit the water wheel to operate the water gate and the by-pas valve. Is that correct?

A. That is correct.

Q. 305. Now, if we ~~would~~^{could} imagine a mechanical brakeman supplied with energy from the locomotive of a railway train with which he is connected, whose duty or function is like the living brakeman now in use, to couple and uncouple cars of the train with which he is connected, but who does not assist the locomotive in moving the train, would we not have a good conception of the function performed by the solenoid 33?

A. No; I don't think that is an appropriate analogy.

Q. 306. In what respect is it inappropriate?

Mr. Blakeslee: Objected to as irrelevant, immaterial, incompetent, and a direct comparison of the parts, devices, etc. of the patent and the alleged infringing de-

vices does not necessitate such attempted analogies, and it is believed the witness is competent to make his comparison or contrast without the assistance of any such analogous suppositions.

A. Because the coupling or uncoupling of cars in the operation of a train with respect to the mechanical parts of the engine, is not at all analagous to making or breaking of electrical circuits by means of the operation of the solenoid 33 and its soft iron core 34.

Q. 307. By Mr. Westall: Isn't it a fact that the part which you have pointed out as the mechanical equivalent of the solenoid 33 does not perform any coupling function like the solenoid 33, but, to follow out the figure of the last preceding question, is rather analagous to the cylinder of the locomotive in that it is one of the means through which energy is conveyed in our illustration to propel the train and, in the alleged infringing devices, to move the water gate.

Mr. Blakeslee: The same objection, and the further objection that it is not cross-examination, and it is not recollected that the term "coupling" has entered into any of the testimony of the present witness or enters into the disclosure of the Lyndon patent.

A. No. The controlling magnet³³ with its soft iron core 34 of the Lyndon patent operates in exactly the same manner as the controlling cylinder with its pair of pistons which I have marked B on blue print KKK to connect or disconnect the operating part from the water wheel gate shaft in exactly the same way in the Lyndon patent as in the alleged infringement. The operating part is connected and disconnected from the cylinder A

with its piston and rod connected to the water-gate shaft. In other words, the controlling cylinder B does disconnect the cylinder A with its piston therein so that the water wheel shaft is not operated except when desired, exactly the same way as in the case of the Lyndon patent with the controlling magnet 33 and the water gate wheel shaft 20.

Q. 308. By Mr. Westall: Taking the parts that you have pointed out as the equivalent of the solenoid in Claim 2 and the fly-balls as the equivalent of the dynamo of the same Claim, can it be properly ~~be~~ said to follow the language of said Claim that the part you have pointed out as the equivalent of the solenoid is connected to the fly-balls in the same sense as used in the language of the claim quoted?

A. Yes, because in the language of Claim 2 "a dynamo connected to be driven by the water wheel" and, further, "a solenoid connected to said dynamo and a device controlled by said solenoid" bear the same relation to one another as the fly-balls of the governor in the alleged infringement as set forth in blue print KKK bears to the controlling cylinder B. In the case of the Lyndon patent that connection is electrical, and in the case of the infringement the connection is mechanical. But the resultant operation in both cases is the same, namely, that the variation of the speed of the main water wheel shaft will affect the controlling device.

Q. 309. Now, the part that you have pointed out as the mechanical equivalent of the solenoid, can it be properly said to be energized by the part or parts which you

have pointed out as the mechanical ^{equivalent} of the dynamo, within the meaning of Claim 5 of the patent in suit?

A. Yes; they are the mechanical equivalent, although in the Lyndon patent electrical circuits are used while in the alleged infringement the device and means are mechanical.

Q. 310. Where, if at all, in the infringing devices, do you find the mechanical equivalents of Claim 5 in the patent in suit to the "core for said solenoid and a circuit controller actuated thereby, springs for holding the circuit controller in normal position"?

A. I find the mechanical equivalent in controlling cylinder B as marked upon blue print KKK, with its pair of pistons.

Q. 311. Which part do you consider the mechanical equivalent of the core of such solenoid?

A. I find nothing that can be considered as the mechanical equivalent for the core only.

Q. 312. Do you find the mechanical equivalent of the circuit controller actuated thereby only?

A. No; I find no equivalent for the circuit controller.

Q. 313. Do you find springs for holding the circuit controller in normal position?

A. No, sir.

Q. 314. Nor the mechanical equivalent?

A. Nor the mechanical equivalent.

Q. 315. Please also point out where, if at all, in the alleged infringing devices you find the mechanical equivalents of two electro-magnetic devices called for in Claim 5 of the patent in suit.

A. I find the mechanical equivalent of the two electro-

magnetic devices for reversely operating the reversing clutch-gear, in the two pipes leading from the controlling cylinder B to the cylinder A with its piston therein.

Q. 316. Will you please indicate by a red pencil as you have indicated before?

A. By the pipes which I now indicate with the letter D.

Q. 317. The two pipes which you have just indicated have already been referred to by you and indicated as part of the devices which you have pointed out as the equivalent of the solenoid? Is that not correct?

A. No, sir. The two pipes D are a means for connecting the controlling cylinder B to the cylinder A in exactly the same manner as the electro-magnetic devices in the Lyndon patent are used for connecting the solenoid 33 with the reversing-clutch-gear consisting of movable bevel gears 9 and 10, so that either can be engaged with bevel gear 11.

Q. 318. Still referring to the language of Claim 2 of the patent in suit, please point out what part or parts you understand are meant by "a device controlled by said solenoid and carrying a contact device"?

A. Parts consisting of lever arms 26, pivoted at center 26A, contacts 40 and 40A, and 41 and 41A.

Q. 319. Please point out in the alleged infringing device the part or parts which in your opinion constitute the mechanical equivalent for "a device controlled by said solenoid and carrying a contact device" as called for in said Claim 2.

A. I find no physical mechanical equivalent to a contact device.

Q. 320. Do you find any kind of an equivalent?

A. Yes; I find that equivalent in the pipes DD.

Q. 321. Can the pipes DD be said appropriately to carry a contact device?

A. No, sir; they do not. But they serve in exactly the same manner as the contact devices of the Lydon patent in suit to connect the controlling cylinder D to the cylinder A, as these contacts connect the controlling solenoid 33 with the clutch mechanism reversing clutch, reversing-clutch-gear, consisting essentially of bevel gears 9, 10 and 11.

Q. 322. Do you find anything in the alleged infringing devices which could without abuse of language be described as "energizing connections for the electro-magnetic gear-controlling means", or do you find in any of the alleged infringing devices any mechanical equivalent for such energizing connections?

A. I find in the alleged infringement no exact physical devices that are equivalent to the energizing connections for the electro-magnetic gear-controlling means. But I find the mechanical equivalent operating in exactly the same manner in the two pipes DD which connect the controlling cylinder B with the cylinder A with the piston therein.

Q. 323. Can the parts which you have pointed out in your last answer be said to be controlled by the parts which you have heretofore mentioned as being the mechanical equivalent of the said "contact device" mentioned in Claim 2?

A. Yes, sir. They are controlled because the controlling cylinder does control the admission to these parts, the pipes D, of the pressure fluid.

Q. 324. I will ask you to refer to the drawings of the patent in suit and point out what you conceive to be the "controller for said operating means" called for in Claim 3 of the patent in suit?

A. The solenoid 33.

Q. 325. I call your attention to the following places in the patent in suit and ask you if, in your opinion, they are not contradictory of your last answer: line 66 of page 1, "Figure 6 illustrates in detail a part of my controlling device"; line 15 of page 2 "controller-lever 26, pivoted at 26A"; line 26 on page 2 "the springs 27 28 enable the returning rod 25 to exert a pressure on the controller 26 to return it to normal position, while permitting displacement of such controller from normal position under the action of its electro-magnetic operating means. Such means consist of the solenoid 33, * * *"; line 38 of page 2 "the energization of the solenoid being responsive to such speed"; line 52 of page 3 "controller solenoid 33".

A. In the patent in suit the controlling device spoken of in the specification, consisting of a number of parts, are best exhibited in Figure 6, as stated in line 66 on page 1. It must be apparent, however, that the controlling part of the controlling device is the solenoid 33 and its soft iron core 34, because in the specifications of the patent it is repeatedly stated that the controlling device is responsive to changes in speed, to changes in voltage in the electro-motive force in dynamo 8, and there is no part of the device which is at all affected by change of speed of the water wheel except the electric current, in

the winding of solenoid 33 and to its consequent action on its soft iron core 34.

Q. 326. Will you please point out in the alleged infringing device the part or parts which you conceive to be the mechanical equivalents of "a controller for said operating means" called for in said Claim 3?

A. The controller cylinder I have marked B on blue print KKK.

Q. 327. Please point out on the patent in suit what part or parts are meant by the language of Claim 3 of the Lyndon patent, "a returning device for said controller"?

A. Rod 25 upon which are mounted springs 27, 28 and 29, the rod 25 being connected by link 25A to a pin on the movable portion on the disc 22A, which is free to move independent or with the shaft 12.

Q. 328. Please point out in the part or parts of the alleged infringing devices which in your opinion constitute, taken together, the mechanical equivalent of a "returning device for said controller", within the meaning of said Claim 3?

A. The automatically controlled dashpot which I mark as E upon blue print KKK, and the mechanical parts connected therewith, especially the rack which I mark on the same blue print with the letter F.

Q. 329. Can it be properly said that the parts you have pointed out as being the mechanical equivalent of the words "returning device for said controller" within the language of such Claim 3, are provided with "a clutch connection for said operating shaft"?

A. No; not the actual physical clutch connection, but

the mechanical equivalent is therein found as a part of the automatically-controlled returning dashpot, which I have marked E upon the blue print KKK.

Q. 330. What part specifically?

A. That part which I mark with the small letter e, which part serves to accomplish exactly the same result in the returning device as the clutch connection to the operating shaft, as a part of the returning device of the patent in suit, being the disc 22A free to rotate upon shaft 12 except as clutched with its companion disc 23.

Q. 331. Is the part which you have pointed out by small e as the clutch-connection connected to the operating shaft in the same sense that it is in the Lyndon patent in suit?

A. In the effect upon its operation, yes sir; exactly the same.

Q. 332. You mean in its final result and not its immediate connection?

A. Its immediate connection is equivalent. It is not exactly the same in its method. But in both instances, both in the patent in suit and the alleged infringement, there is a direct mechanical connection with the operating shaft.

Q. 333. Where is the part that you consider to be the operating shaft referred to in Claim 3, where it is stated a "clutch-connection to said operating shaft"?

A. The operating shaft is, as I indicated on blue print KKK by the letter F. And that is connected to the clutch which I have indicated by a small e through the piston rod with the automatically-controlled returning

device, this piston rod being marked capital G, the bell crank H, the link I, the lever J and the rod K.

Q. 334. Can the parts that you have pointed out as being the mechanical equivalent of "the returning device for said controller", be appropriately said to be "actuating means controlled by said controlling means" within the meaning of the language of Claim 4 of the patent in suit?

A. Yes, sir.

Q. 335. Please point out in the alleged infringing device the part or parts which in your opinion are the mechanical equivalent of the "actuating means".

A. "Actuating means" are the springs which I mark with the letter L.

Q. 336. Are the parts which you pointed out in answer to the last question controlled by the parts which you have pointed out as "controlling means" within the language of such Claim 4?

A. Yes sir.

Q. 337. Do the parts which you have pointed out as being the mechanical equivalent of the actuating means operate to control the controller to inoperative position so as to prevent excessive movement of the governor?

A. Yes, sir.

Q. 338. What part in the Lyndon drawing do you understand is meant by the circuit controller of Claim 5?

A. The lever arm 26 and the lever arm 43, with various parts and contacts on these two lever arms.

Q. 339. Where is its mechanical equivalent found in the alleged infringing device?

A. It is found in part in the controlling cylinder B, the controller of the Lyndon patent being referred to repeatedly as a combination of a solenoid 33, lever arms 26 and lever arms 43, and so forth, all of which taken together in practical operation are found to be equivalent to the mechanical device.

Q. 340. But could you point out any specific part of the alleged infringing device which you can properly or appropriately call a circuit-controller?

A. No, sir; there is no physical equivalent of the circuit controller on the infringing device.

Q. 341. Could you point out any part or number of parts which are the mechanical equivalent of said circuit-controller?

A. No; I cannot point out any part of the cylinder B with its two connecting pipes D that could be said to be the exact equivalent of the circuit-controller as set forth in the Lyndon patent.

Q. 342. Do you find anywhere in the alleged infringing devices the mechanical equivalent of "a clutch adapted to bring said returning device into operative connection with water-gate-operating shaft" described in Claim 5 of the patent in suit? If so, mention it and point it out specifically in the alleged infringing devices.

A. I find the equivalent in the part which I have marked small e upon the automatically-controlled dash pot for the purpose of returning the controller to its normal position.

Q. 343. Where, if at all, do you find in the alleged infringing devices the mechanical equivalent of "a mag-

net controlling said clutch'', as mentioned in said Claim 5?

A. I find no equivalent of the magnet alone.

Q. 344. Do you find anything in the alleged infringing device which could be appropriately described as ''a circuit for said magnet'' as described in Claim 5?

A. No; I can find nothing to be described as a circuit for said magnet.

Q. 345. Referring still to the language of Claim 5 of the Lyndon patent, please point out in the alleged infringing devices the mechanical equivalent of ''circuit closers''.

A. I find mechanical equivalent to the words ''circuit closers''.

Q. 346. Where, if at all, do you find the mechanical equivalent of ''means actuated by said controller on movement thereof from normal position to engage said clutch with said shaft'' within the meaning of Claim 3 of the patent in suit, in said alleged infringing device.

A. I find the equivalent in the automatically-controlled dashpot, which I have marked E in blue print KKK, with its clutch, which I have marked e, and also rack which I have marked F, the combination of which consists of ''Means actuated by said controller on movement thereof from normal position to engage said clutch with said shaft'', as set forth in Claim 3.

Q. 347. Referring to the line-drawings U and V, or either one of them, please state what the normal position of the auxiliary valve of the auxiliary nozzle is in the device there shown.

Mr. Blakeslee: Objected to as indefinite, vague and incomplete.

A. Well, in neither of the line-drawings U and V is it shown what is necessarily the normal position.

Q. 348. By Mr. Westall: What would you consider the normal position of the valve in the auxiliary nozzle to be?

A. I have had experience with some plants where the normal position would be partly open or fractionally open any amount from entirely open down to what would be practically entirely closed, depending in every case upon the individual plant and its best method of operation under the requirements of the delivery of water below the plant, and so forth. In my experience I know a normal position of the by-pass valve is capable of adjustment and may be anything which the conditions of operation require.

Q. 349. What do you understand is meant by normal position of the by-pass valve in the Lyndon patent in suit?

A. Line 35, page 4, "normally the gate or valve of the by-pass will be half way open so that the amount of water flowing through the by-pass and around the wheel without doing work will be half the amount which the by-pass is capable of carrying".

Q. 350. Is it not a fact that Lyndon shows and describes a device in which the opening and closing movement of the water gate in any appreciable degree will cause a corresponding inverse movement of the by-pass valve?

A. No; not in all instances. To me this is apparent

by lines 88 to 98 on page 4 in which it is stated "it is here to be noted that all water-wheel governors as made today must accomplish their governing only at such a speed as the acceleration or retardation of the water in the column of the pipe can be accomplished, whereas in the case of the governor hereinbefore described, with the compensation-gate and actuating apparatus, the time element is removed from the main gate and the water wheel and taken care of in the by-pass." That indicates clearly to me that if the time element is removed from the main gate and the water wheel, and taken care of in the by-pass, that it does not mean that in every instance the by-pass valve and the water-wheel gate valve shall always be operated inversely; and the operation of the device as disclosed in the Lyndon patent indicates that that may be done. For instance, it is quite possible for controller magnet 33 to actuate magnets 15 and 16 and not actuate any other device whatever. If the controlling magnet 33 is energized and will operate the water gate in either direction through the magnet 15 or 16, then there is absolutely no action whatsoever transmitted to the by-pass itself. So that it is not true that in the Lyndon patent the inverse or the contrariwise operation of the water-gate valve and the by-pass valve are necessary.

Q. 351. Do you consider that the by-pass valve of the Lyndon patent in suit is the mechanical equivalent of the needle nozzle of the alleged infringing device?

A. Yes, sir; because the needle nozzle is well known to be only one type of valve.

Q. 352. Then the needle valve performs the same

function and in the same way as the valve shown in the Lyndon patent?

A. Yes, sir.

Q. 353. If you as a skilled ^{and} engineer were erecting a plant, would you just as soon put in the valves shown in the Lyndon patent as the nozzles of the line-drawing in suit?

A. No; I think not. I think there are conditions when I should prefer to use the needle type of valve, contrasted with the type of valve which is shown in the drawing Figure 1, which indicates a butterfly valve very well adapted for low heads but not well adapted for high heads.

Q. 354. Do you consider that the invention of the Lyndon patent consisted, as set forth in Claim 6, of "means for operating the water gate in either direction" or in the specific means connected to the water-gate-operating means for operating the by-pass valve inversely to the operation of the water gate?

Mr. Blakeslee: Objected to as not calling for the entire invention. It is a fragmentary setting forth and, is therefore, indefinite and incomplete.

A. I do not consider that the Lyndon patent is solely and completely and entirely embraced as set forth in the question.

Q. 355. By Mr. Westall: What do you consider the essence of the Lyndon invention is, very briefly? Or, in other words, what was it that Lyndon added to the art?

A. The essence of the Lyndon invention stated in terms of what Lyndon added to the art, was, I should say, a means of governing for constant speed of water

wheels whereby a variation of the speed would result in a proper change in the water-gate opening. If the required change of the water-gate opening was large enough, Lyndon's invention considered the serious consequences of the inertia of the water in the pipe line, and he provided in addition to a means of controlling the delivery of the water through the water gate to the wheel and by-pass valve so that when conditions required, namely, when there was excessive change of speed requiring a considerable change in the velocity of the water in the pipe line, that water gate valve and the by-pass valve could be and were operated inversely. So, if the water gate opened the by-pass valve closed, and if the water gate closed the by-pass valve opened. And he also provided what is in my mind a matter of very great importance and new in the art, namely, the automatically-controlled return of the governing mechanism so that the governors would not overrun and bump, as we have stated, or, as was commonly termed, the overrunning of the governor and attempting to correct speed in the other direction. But Lyndon found a very great, desirable and actual means, so that the governor mechanism could be returned to its normal position with a sufficient time element so as to prevent any serious stresses in the pipe line.

Q. 356. Do you think the following language correctly describes a construction which would substantially be covered by Claim 6 of the patent in suit: "A governor construction combined with a water gate and by-pass wherein the by-pass and water gate under the con-

trol of the governor are operated inversely each with respect to the other?"

Mr. Blakeslee: Objected to as putting before the witness an arbitrary statement of possible construction not shown to be before the witness, and, therefore, not being one of those things which the witness may be properly examined about in cross-examination, namely, not being one of those things with which the testimony of the witness has dealt in comparing and applying the invention of the patent in suit with the alleged infringing construction. And defendant's counsel is notified that this line of examination tends to constitute an attempt to shape the defense in this suit out of the mouth of a witness for the complainant, and that if the question or any further questions of the same sort is or are persisted in, he will be making the witness his own as to that question, and that any further persistence of this sort will cause us to bring a motion at the proper time to tax against the defendant the cost of taking and returning the cross-examination record of this witness or, at least, such parts thereof as are involved in such inquiry and the responses thereto. And notice of such motion is hereby given. It is to be noted that counsel intentionally is varying from the language of Claim 6, and, therefore, is putting before the witness a supposed variable structure which is not shown to be part of those things entering into the appropriate comparisons by the witness in this cross-examination.

Mr. Westall: Counsel for the defendant simply states that he is simply trying to put in other words the descriptions and expositions of the witness heretofore

given on direct examination.

A. No; that would not be equivalent.

Q. 357. What would you add or subtract to or from the language quoted in the last question to make it an accurate description of the device which you would say contained the mechanical equivalents of Claim 6?

Mr. Blakeslee: The above objection and notice will be considered as repeated to this question and all subsequent questions of this sort.

A. The language does not correctly represent the invention as set forth in Claim 6 or the invention as described in the patent in suit, because the by-pass and water gate are not necessarily operated inversely each with respect to the other, either in the wording of Claim 6 or the patent in suit, because Claim 6 itself uses the words "means connected to the water-gate-operating means and operating the by-pass valve inversely to the operation of the water gate", since it does not follow that means connected to water-gate operating means and operating by-pass valve inversely to the operation of the water gate implies that the by-pass and water gate under the control of the governor are operated inversely, each with respect to the other, the difference being in the use of the word "are" as contrasted with the use of the words "means connected to the water-gate-operating means" since there may be means connected to the water-gate-operating means which may not cause at all times the by-pass and water gate under the control of the governor to operate inversely each with respect to the other.

January 26, 1914, P. M.

By Mr. Blakeslee - At this point the witness is excused to appear later for further cross examination

GEORGE J. HENRY, JR., Complainant, heretofore sworn and examined, being recalled for further direct examination, testified as follows in response to questions propounded by Mr. Blakeslee:

DIRECT EXAMINATION.

By Mr. Blakeslee:

Q. 475. Can you now produce a further showing or blue print as requested previously on the record illustrating any installation at either the Division Creek No. 2 power plant or the Cottonwood power plant discussed in your previous examination?

A. I can. I hand you a blue print of such an installation illustrating the apparatus in the installation in the Division Creek No. 2 plant, showing the associated apparatus which I have previously testified to in connection with this plant, and the several parts of which are more clearly shown in the several exhibits already in the case, and which I used in the preparation of this blue print. These exhibits are specifically Complainant's Exhibit V, Complainant's Exhibits H, I, J, K and L, and VV, and said blue print exhibit which I have prepared from these illustrates clearly the several parts of said apparatus in a complete associated assemblage in side elevation.

Q. 476. In what do the differences between this blue print and the showing of Complainant's Exhibit KK and KKK consist, using for the basis of comparison, if you wish, any other exhibits there may be in this case.

A. The means and manner of operation of the several means involving the governor features are identi-

473 15½ insert "January 27, 1914. 1:30 P. M.

Pursuant to adjournment the parties met.
Present:—

Raymond Ives Blakeslee, Esq., solicitor for complainant.

Joseph F. Westall, Esq., solicitor for defendant.

Mr. Blakeslee:—With respect to the notice given the defendant on the record of motions to be presented to the court on Thursday, the 29th of January, 1914, in view of the present interruption of railway transportation rendering it practically impossible to count upon arrival in Los Angeles at the hour stated, even if departure is made from the city of San Francisco upon the 28th of January, after the conclusion of taking testimony in said city of San Francisco as per the adjournment which is about to be noted until tomorrow, the said motions are noticed over from the said 29th of January to the 30th day of January at the same time and place, with full force and effect as if same were repeated in full.

(By consent of parties for both sides tomorrow, Wednesday, January 28, 1914, at the hour of 9:30 A. M.)"

cal. Their physical dimensions and proportions vary, however, from those shown in Exhibit KK, and the setting of the different parts are somewhat different. But the same means are used to accomplish the same results as in Exhibit KK.

Q. 477. And as to any such differences as exist, are they reflected in the photographs of Complainant's Exhibits H to L of the Division Creek No. 2 plant?

A. Yes, sir; the blue print is in accordance with the photographs.

Mr. Blakeslee: We offer in evidence the blue print just described as Complainant's Exhibit LL.

Mr. Westall: Cross-examination is waived.

(The said blue print so offered in evidence is marked by the Special Examiner Complainant's Exhibit LL.)

January 28, 1914, A. M.

C. L. CORY, heretofore sworn, examined and partially cross-examined, being recalled, testified as follows:

CROSS EXAMINATION (resumed)

By Mr. Westall:

Q. 358. What do you understand is meant by the words "normal position" of the water gate, as used in Claim 7 of the patent in suit?

A. I understand by the words "normal position" as quoted from Claim 7, line 70, page 5 of the patent in suit, referring to the water gate, the position of the water gate during normal speed of the wheel under ordinary operating conditions.

Q. 359. Do you understand that "normal position" in line 70 means normal speed?

A. No, sir; I do not understand that it means normal speed. But the entire statement is between commas: "The combination with means for operating the water gate in either direction from normal position," and I understand the words "normal position" is there indicated to correspond to the position of the water gate at normal speed of operating the wheel under any given condition.

Q. 360. And at normal speed what would be the position of the water gate with respect to the complete closing of complete opening?

A. That would depend upon the load being carried by the water wheel.

Q. 361. Would you say that "normal speed" meant completely closed?

A. No, because that would correspond to the water wheel not operating at all.

Q. 362. Would you say that it meant completely open?

A. No; not under operating conditions, because for the normal speed of the wheel regulating the water gate to be entirely open, any increase of the load could not be met by an increased amount of water.

Q. 363. So that normal position under operating circumstances would mean somewhere between complete closing and complete opening?

A. Yes, sir.

Q. 364. It would be in partly open position?

A. Yes, sir.

Q. 365. Now, with the water gate of the Lyndon patent in normal or partly open position, on an increase

of the load carried by the water wheel the water gate is opened still further to compensate for the heavier load. And if the load be decreased, the water gate would move towards closing position. Is that correct?

A. That is correct.

Q. 366. Then when Claim 7 of the Lyndon patent calls for "means for operating the water gate in either direction", it signifies, does it not, means for operating the water gate in both directions?

A. Yes and no. It intends to convey the idea that the water gate may be operated in either the one direction or the other; but it does not mean to convey that necessarily is the water gate operated in both directions. It is true that "either direction" and "both directions" are synonyms of both directions. It is further understood that "both directions" involves the operation either in the one direction or the other or two directions.

Q. 367. But the means shown and described by the Lyndon patent is a means for operating the water gate not only toward opening position but also toward closing position, and vice versa?

A. Yes, sir.

Q. 368. So that the means there disclosed does operate the water gate in both directions?

A. Means there disclosed makes it possible to operate the water gate in both directions, but does not necessarily require the water gate to operate in both directions.

Q. 369. It is a fact, is it not, that the device of the patent would be inoperative as a governing device if it

did not include means for opening ^{rat}~~ing~~ the water gate in both opening and closing directions?

A. Yes, sir.

Q. 370. So that in that sense, at least, the words "either" in line 70 page 5 of the patent in suit, means "both", does it not, in that particular sense?

A. In that restricted sense of the use of the words "either" and "both", yes sir.

Q. 371. And the same is true, is it not, with the word in line 29 of the patent in suit, in line 41, in line 63, in line 84 and line 103, all on page 5 of the patent in suit?

A. Yes, sir. It being, of course, understood that the use of the word "either" in each of the lines indicated in your question must be understood to convey the idea that there are two directions for motion, these two directions necessarily being understood as possible motions in both directions.

Q. 372. In answer to a previous question you quoted the language of the specifications of the patent in suit beginning at line 35 page 4: "Normally the gate or valve in the by-pass will be half-way open." Is it not a fact that Lyndon shows and describes means for operating this by-pass valve so as to move it both toward more open position than normal and to move it toward more closed position than normal?

A. Yes, sir.

Q. 373. So that among the various devices shown and described by the Lyndon patent in suit are means for both opening and closing the by-pass valve? Is that correct?

A. Yes, sir; using the word "both" in the sense

that it tends to convey the idea that it may be moved either so as to close the by-pass valve or to open the by-pass valve.

Q. 374. Construing then said Claim 7 of the patent in suit in the light of the specifications and drawings of the Lyndon patent, should it not be said that the language of Claim 7 "means * * * adapted to operate the by-pass valve from normal position in either direction" signifies not a choice of directions but signifies means for operating the by-pass valve in both directions?

Mr. Blakeslee: Objected to as an attempt to draw from the witness conclusions based upon indefinite and improper assumptions as to the detailed disclosure and import and meaning of the drawings and specifications of the Lyndon patent in suit and of the previous testimony of the witness.

A. The quotation from Claim 7 beginning with the word "means" on line 70 on page 5 of the patent in suit, and ending with the word "direction" on line 75 of the same page, in my opinion cannot be properly construed as to in any way indicate that "both directions" shall be understood as contrasted with "either direction." And, further, the drawings and specifications of the patent as well as the claims clearly set forth that means are provided not only for operating the water gate in either direction, but similarly means are provided which are connected with the water-gate-operating means for operating the by-pass valve from normal position in either direction, and I do not think that the language of the claim or the language of the specifications of the patent

in suit can be properly interpreted to exclude the idea that the by-pass valve is not to be moved in either one direction or the other as contrasted with the idea that the by-pass valve is moved from normal position in both directions.

Q. 375. By Mr. Westall: As a matter of fact, Mr. Lyndon does show a by-pass valve and means for operating it in both opening and closing directions, does he not?

A. Yes, sir.

Q. 376. Then when you gave the construction which you have to Claim 7, you are considering the language apart from the drawings and descriptions, are you not?

A. No, sir. For this reason: I do not find any place in either the specifications or the claims where the words "both directions" are used. But I find repeatedly in the specifications and the claims the words "either direction."

Q. 377. So that your understanding is that it means simply a choice of directions. Is that correct?

A. Yes, sir. Whichever direction may be desired for the proper operation of the water wheel. And I understand the drawings and specifications to describe an invention whereby, if necessary, the by-pass valve might be moved in only one direction, because specifically the claim and specification says the same may be moved in either direction, which necessarily implies that it is not in both directions.

Q. 378. But is not that expressly stated in the language of the specifications?

A. The language of the specification is clear that means are provided that the by-pass valve as well as the water-gate valve may be moved in either the one direction or the other, which is certainly, under those conditions, that it may be moved in both directions. But the language of the specification certainly is clear that the idea to be understood is that, if necessary or if desirable in the operation of the wheel, we may operate either the water gate only in one direction or we can operate it in the other direction and, similarly, for the satisfactory operation of the water wheel we may, if we choose, so adjust the by-pass valve that it will be operated in only one direction and not operated, if desired, in the other direction. However, means are provided for operating it in either direction or both directions if you find that the movement of the gate-valve and by-pass valve should be for satisfactory operation operated in both directions. I know of many instances in the operation of a plant where the reduction of speed would not be serious, but a sudden increase of speed would be serious, where there is a dead load or constant or uniform load in part, and, in addition to that, a widely varying load. Under such circumstances it would probably be desirable to allow the water gate only to be opened when the variable load was thrown on and prevent the water gate from being closed or moved in the other direction, because we can be certain that the uniform, constant load is there to keep the speed of the wheel constant, independent of the position of the water gate, and, therefore, it is not necessary to close the water gate in connection with the governing of the water wheel beyond a certain

amount. And in my opinion the drawings, specifications and claims of the Lyndon patent are exceedingly clear that the water wheel may be governed by the devices there shown so as to prevent either excessively high speeds only or excessively low speeds only, since means are provided for operating the water gate and by-pass valve in either direction as contrasted with the requirement for means for operating the water gate and by-pass valve in both directions.

Q. 379. How would you reconcile the language of the following lines of the patent in suit with your ideas as to the intended operation of the by-pass valve as described in the claims mentioned in the preceding question, line 28, page 1: "I provide a by-pass * * * and a gate in the said by-pass * * * operating to allow a greater or less flow through the by-pass, according as the water gate is being closed or opened"; line 31, page 4: "Consequently the by-pass valve will be turned toward open or shut position, according to whether the gate is closing or opening"; line 44, page 1: "Means are also provided for arresting the action of the governor when the water-gate is fully opened or closed"; beginning with line 65, page 3: "Suppose that the load in the shaft has been decreased." (Then follows a description of the effects produced by the increased speed of the water wheel, which need not be read * * *) * * * "and the water gate will be closed"; line 40, page 4: "When the governor acts to close the main gate, the compensating device will open more widely the by-pass"; line 48, page 4: "Should the main gate open, a reverse action takes place"; line 74, page 4: "It is obvious that the

by-pass, arranged as described, opening or closing in a manner opposite to that in which the main gate opens or closes * * *"; line 80, page 4: "After the governing takes place the by-pass gate is either open or closed or nearly so". Do they not show that Lyndon in his specifications, at least, clearly contemplated that the water gate and the by-pass valve should automatically open and close?

A. To answer the first part of your question, I find nothing in any of the quotations which you have indicated which in any way is contrary to my interpretation of the words "either direction" as contrasted with the words "both directions". To answer the second part of your question, the quotations as set forth in your question refer to conditions where the variations of speed of the water wheel are to such a degree that the water-gate valve and the by-pass valve are both put into motion. The quotation beginning on line 45 of page 1 refers to conditions when the water-gate is fully open or closed, as specifically stated in line 46, indicating necessarily extreme conditions. In all of the quotations the requirement is stated that a change in load actually does cause a change in the speed of the main water wheel shaft, and the specifications and the drawings and the claims indicate, if this change in speed is sufficient, first that the water-gate will be moved followed by an inverse motion of the by-pass valve. Further, beginning with line 49 of page 2, we find the statement: "The solenoid 33 also serves to control the action of the compensator magnets and returning...magnets through a secondary controlling lever 43," setting forth clearly that the op-

eration of the by-pass valve is secondary to the operation of the water-gate, and the drawings, especially Figure 6 of the patent, show that the contacts 41, 41A and 40 and 40A, which control the water-gate, operate prior to the contacts 45A, 45 and 100 and 101, which operate the by-pass valve; and it is evident from a study of the specifications and claims that means are provided for operating the water-gate and by-pass valve inversely. But the disclosures of the patent also indicate that it is quite possible to have the water-gate alone operated with comparatively small changes in the load without necessarily involving the operation of the by-pass valve.

Q. 380. You say "it is quite possible", intending to indicate, I suppose, that Lyndon nowhere expressly says as much or indicates that the contacts are made to be made successively as you have described. Is that correct?

A. I used the words "quite possible" because a study of the drawings and specifications clearly indicates this fact.

Q. 381. Now, if Lyndon shows a water-gate adapted to be operated in both directions and a by-pass adapted to be operated in both directions, is it not giving the words their usual and ordinary signification to say that when the word "inversely", as used in the claims of the patent in suit in connection with the operation of said water-gate and by-pass valve, that it means that when the water-gate is moved for opening position the by-pass valve is toward closing position, and when the by-pass valve is moved toward closing position the water-gate is moved toward opening position.

A. No, sir. I do not think that is the proper interpretation of the words "means for operating the water-gate in either direction", or "means for operating the by-pass valve inversely with the operation of the water-gate." When you say that the by-pass valve is operated inversely with the water-gate valve, or that the water-gate valve is operated inversely with the by-pass valve, that is a very different things from the disclosures of the patent wherein it is stated, for instance in line 69 of Claim 7 on page 5, "Means for operating the water-gate in either direction from normal position, the by-pass for the water-wheel and a valve for such by-pass, of means connected to the water-gate-operating means and adapted to operate the by-pass valve from normal position in either direction". What I wish to have made clear is that in my opinion there is a decided difference in the two expressions, the first one being that the water gate and the by-pass valve are operated inversely, and the second expression which is that there is a device as set up in the Lyndon patent where a means are provided for operating the water gate in either direction and means connected to the water-gate-operating means, and adapted to operate the by-pass valve from normal position in either direction.

Q. 382. What do you understand is meant by the words "governing action of the water-gate" as used in Claim 7?

A. The governing action of the water-gate is the opening or closing of the water-gate, but not necessarily the opening and closing of the water-gate.

Q. 383. Does it not mean any appreciable move-

ment of the water-gate toward opening or closing position?

A. Yes; that would be a governing action.

Q. 384. Then if governing actions are performed by the water-gate moving in either or both directions, when claim 7 calls for “means * * * * * adapted to operate the by-pass valve from normal position in either direction, so as to control such valve inversely to the control of the water-gate during governing action of the water-gate”, “inversely” is to be understood as implying the full closing and opening operations of the water-gate, is it not?

A. It is adapted to both closing of the water-gate as well as to either opening the water-gate or closing the water-gate—either one alone and not necessarily both. Because we find clearly the words in line 72 “of means connected to the water-gate-operating mean and adapted to operate the by-pass valve from normal position in either direction.” That is, the means are connected to the water-gate-operating means and adapted to operate or may operate and unquestionably will operate with variations of speed. But “means adapted to operate”, to my mind, does not convey the same idea as that it always is operated.

Q. 385. If the governing movement of the water-gate-operating means may be performed when the water-gate is moved from normal position either toward opening or toward closing position, then the language of Claim 7 reading “means for returning the by-pass valve to normal position on completion

of governing movement of the water-gate-operating means" implies, does it not, that such "means for returning the by-pass valve to normal position" have the function of either further opening or further closing the by-pass valve? Is that correct?

A. That is correct with this distinct understanding: That from Claim 7, beginning with line 78, "means for returning the by-pass to normal position on completion of governing movement of the water-gate-operating means" clearly indicates that the water-gate is absolutely standing still—is not being moved at all,—and at the same time means are provided for returning the by-pass valve to normal position. It clearly indicates that it is not the intention of the patent in suit to restrict the motion of the water-gate valve so that it will always be accompanied by an inverse motion of the by-pass valve, since, in the latter part of Claim 7 it is distinctly stated in line 78 "means for returning the by-pass valve to normal position on completion"—equivalent to the words "after the governing movement of the water-gate-operating means has ceased its operation", meaning in plain words that the water-gate is absolutely standing still, and, at the same time, the by-pass is slowly being closed. That is further set forth again beginning on line 92, page 2: "On the ropes 51 52 are lugs or clamps or stops 65 66, adapted to engage under and lift weights 70 70 when the sheave is turned either way from normal position, these weights being guided in casings 69 on a suitable fixed support. Means may be provided for

easing off the descent of these weights, if desired. For example, the casings 69 may constitute dashpots," clearly indicating that the rapid closing of the by-pass valve may be prevented, this closing of the by-pass valve occurring at a time when the water-gate is absolutely stationary and not being moved at all.

Q. 386. Mention specifically the parts of the alleged infringing device which in your opinion are the mechanical equivalents of "a clutch, adapted to connect said operating device for the by-pass valve with the water-gate-operating shaft," within the meaning of Claim 8 of the patent in suit.

A. I do not find in the alleged infringement the physical clutch adapted to connect said operating device for the by-pass valve with the water-gate-operating shaft. But I do find in the alleged infringing device the mechanical structure which I mark M upon blue print KKK, since the dashpot which I have marked M with its piston and the spiral springs and oil contents, operate in exactly the same manner as clutch 58 57 operates in the patent in suit to transmit the motion which is operating the water-gate valve to the by-pass valve, the motion being transmitted in both instances not rigidly but flexibly, the degree of flexibility being coupled in both instances with adjustment.

Q. 387. What is the function performed by clutch 57 58 in the Lyndon patent in suit?

A. The function of clutch 57 58 in the Lyndon patent in suit is to transmit motion from the water-

gate-operating shaft 20 to the by-pass-operating shaft 49. In the ordinary operation of these two shafts, this motion is not necessarily continuously transmitted but intermittently transmitted.

Q. 388. Does the part that you pointed out as the mechanical equivalent of the clutch perform identically the same function and no more than is performed by the clutch 57 58 of the Lyndon patent in suit?

A. It performs the same function.

Q. 389. Does it perform any further additional function?

A. Yes; it performs the additional function which is performed in the Lyndon device by additional parts such as sheave 54, the ropes thereon, and the lever 50, etc. In other words, clutch 58 57 would not of itself in its operation transmit motion to shaft 49 of the by-pass valve, but requires the additional devices which I have mentioned, while the dashpot which I have marked M on the alleged infringement is complete.

Q. 390. What is the function of the spiral spring in the dashpot to which you have just referred?

A. The function of the spiral spring is to tend to move the by-pass valve to closed position.

Q. 391 Does the clutch 57 58 of the Lyndon patent have any such function?

A. No; not within itself.

Q. 392. Where do you find in the alleged in-

fringing device "the controller" of Claim 8 of the patent in suit?

A. "The controller" is found in line 95 of Claim 8 on page 5 and refers to the equivalent device on the alleged infringement which is lettered B on blue print KKK, this controller being "responsive to the speed of the water-wheel", as stated in line 95, page 5, and Claim 8 of the patent in suit.

Q. 393. Would you say that construed in the light of the Lyndon specifications and drawings the "reversing means for operating the water-gate-operating shaft" called for in Claim 8 signifies that the said reversing means may operate the water-gate in only one direction?

A. As described in the patent, unquestionably the water-gate may be operated in only on direction, although the description in the patent clearly indicates the general operation of the water-gate in both directions, since it is clear that in the reversing clutch gear, consisting of bevel gears 9 and 10, either of which may mesh with bevel gear 11, either of the friction discs 13a or 13b referred to in line 90, page 1, may be so adjusted as to not engage if in the operation of the water wheel such lack of operation of either 13a or 13b may be desirable.

Q. 394. In the "controller" of Claim 8 of the patent in suit, as described in said claim as controlling said reversing means, do you understand its signification to mean that said controller controls the said reversing means in only one direction?

A. No; as far as it is concerned it controls the

reversing means in both directions. But, as I said before, the adjustment of the friction discs 13a and 13b in connection with the lever 13 may be so adjusted as to not transmit the rotation of shaft 6 even though the controller, as far as its operation is concerned, would tend to do so.

Q. 395. Please point out in the Lyndon drawings the "means operated by said controller to bring the aforesaid clutch into operation and to release said clutch when the governing action is affected" as called for in Claim 8 of the patent in suit.

A. Referring to Claim 8, line 97, page 5, "means operated by said controller to bring the aforesaid clutch into operation" in the Lyndon patent includes electro-magnets 15 and 16, either one of which will operate upon armature 17 and connect either bevel gear 11 to bevel gear 9 or 10, depending upon which electro-magnet is actuated by the controller. Further referring to Claim 8 beginning with line 99, "and to release said clutch when the governing action is effected", includes, as set forth in Figure 1 of the Lyndon patent in suit, the lever arm 26 carrying contacts 40, 40A and 41, 41A, and the opening of either of these contacts releasing the clutch when the governor action is effected.

Q. 396. Please now indicate where, if at all, in the alleged infringing devices you find the mechanical equivalents of "means operated by said controller to bring the aforesaid clutch into operation and to release said clutch when the governing action is effected", within the meaning of said Claim 8.

A. I find in the alleged infringement the means operated by said controller to bring the aforesaid clutch into operation, the two pipes DD leading from the two ends of the controller cylinder B, the equivalent of the clutch being the cylinder within which there is the piston A, which is operated in either direction in the same way as the clutch in the Lyndon patent. And, further, to release said clutch when the governing action is effected the double pistons in the controller cylinder B move to such a position as to cut off the flow of the pressure fluid from the controller to the cylinder in which there is the piston A, capable of being moved in either direction in the same way as the reversing clutch of the Lyndon patent.

Q. 397. Are the mechanical equivalents of "the means" you have pointed out in answer to the last question "operated" by the parts you have pointed out as the mechanical equivalent of the "controller" within the meaning of said Claim 8?

A. Yes, sir.

Q. 398. What is the function performed by the cylinder with its piston A in the alleged infringing device?

A. It is to transmit motion in either direction to the water-gate-operating shaft F.

Q. 399. What part or parts do you understand are meant by the "clutch" mentioned in Claim 8 of the Lyndon patent in suit?

A. I understand the clutch mentioned in Claim 8

to refer to bevel gears 9, 10, bevel gear 11 and sleeve 13, and friction discs 13a and 13b.

Q. 400. Where, if at all, do you find the mechanical equivalent of said clutch within the meaning of Claim 8, in the alleged infringing device?

A. I find the mechanical equivalent in the cylinder with its piston A as marked on blue print KKK. That is the equivalent of the reversing clutch in the Lyndon patent.

Q. 401. Is the part which you have pointed out as the mechanical equivalent of the "clutch" of Claim 8 brought into operation and released by the parts you have pointed out as the mechanical equivalents of "means operated by said controller" mentioned in said Claim 8, within the meaning of said claim?

A. Yes, sir.

Q. 402. When Claim 9 of the Lyndon patent calls for "means for returning the valve to normal position", said language is to be understood, is it not, as signifying that if the valve has been opened to a position wider than normal, such means will operate to move it toward closing position; and if the valve has been closed to a position less than normal, said means will operate to move it toward opening position. Is that correct?

A. I do not think it is right to say that it will move to operating it. The means is adapted to operate it in the directions that you have indicated. But that the means will absolutely operate it in the direction indicated does not necessarily fol-

low when the words of the Claim are "means adapted to operate it", and provided with "means to return the valve to normal position".

Q. 403. Just how much and what parts of the alleged infringing mechanism do you consider as being the mechanical equivalents of the "dynamo" of Claim 9?

A. Practically the fly-balls and their component parts, of what is commonly known as the fly-ball governor. By that I do not mean the governor in the sense that we have used the water-wheel governor, but the fly-balls so arranged that they will be thrown out with increased speed and will recede with decrease of speed.

Q. 404. Just what parts would you include as the component parts spoken of in your last answer?

A. I would include the fly-balls themselves and their connections on the bottom and the top collars of the fly-ball governor.

Q. 405. Please point out specifically the parts in the alleged infringing device which in your opinion ~~are the mechanical equivalents~~ ^{are the mechanical equivalents} of the controller as mentioned of Claim 9.

A. I understand the mechanical equivalent in the alleged infringement of the controller as mentioned in Claim 9 on lines 115 and 116 to be the controller cylinder B.

Q. 406. The parts which you have pointed out as the mechanical equivalents of the controller, can they be said to be "operated" by the parts which you

have pointed out as the mechanical equivalents of the electro-magnetic device?

A. Yes, sir; since in both cases, namely, in the Lyndon patent and in the alleged infringement, the controller is operated by a variation of speed. In the Lyndon patent it is due to a change in the electro-motive force of the dynamo, and in the alleged infringement it is due to a change in position of the fly-balls designated by C in the blue print KKK.

Q. 407. What do you consider the mechanical equivalent in the said infringing device of the electro-magnetic device mentioned in lines 115 and 116 of Claim 9 of the patent in suit?

A. I understand the mechanical equivalent to be the controller cylinder B.

Q. 408. And what do you understand to be the mechanical equivalent of the controller?

A. The same. The controlling cylinder B.

Q. 409. So the electro-magnetic device and the controller are one and the same thing?

A. They are part of the same general controlling device whereby variations of speed cause certain results.

Q. 410. Then it would lead to the conclusion, would it not, to say that the part which you have pointed out as the mechanical equivalent of said controller within the meaning of Claim 9, that it is operated by the mechanical equivalent of what you pointed out as the "electro-magnetic device" of Claim 9?

A. Yes, sir. Probably it might avoid confusion to say that the pipes DD in the one correspond to the

electro-magnetic device in the other, because the object of the electro-magnetic device in the Lyndon patent is to respond to the operation of the controller in affecting the reversing clutch, and so in the mechanical equivalent of the alleged infringement, as set forth in blue print KKK, the two pipes D have the pressure fluid admitted to either the one or the other of them, tending to operate the piston A within its cylinder due to the operation of the controlling cylinder B.

Q. 411. Please point out in the infringing device the mechanical equivalent of the "clutch for the by-pass-operating means" of Claim 9 of the patent in suit.

A. "Clutch for the by-pass-operating means" in line 120 of page 5, Claim 9, evidently refers, since the word "aforesaid" immediately precedes the word "clutch", to the clutch as found in line 109 of page 5 in Claim 9,—“a clutch, adapted to connect such operating means with the water-gate-operating shaft”, So that the clutch referred to corresponds with the dashpot marked M on blue print KKK, being the equivalent of clutch 58 57, Figure 1 of the patent in suit, and the device is connected therewith for operating the by-pass valve 49.

Q. 412. Do you find in the alleged infringing devices the mechanical equivalent "a circuit for said magnet" as called for in Claim 9 of the patent in suit? If so, please point out and indicate.

A. I do not find the physical equivalent of the circuit for said magnet. The circuit normally re-

ferred to in said claim being to an electrical conductor for the purpose of carrying electricity.

Q. 413. Where, if at all, in the alleged infringing devices do you find the mechanical equivalent of "means * * * to close such circuits", as called for in Claim 9 of the patent in suit?

A. I find no such physical equivalent as described by those words in the alleged infringement.

Q. 414. The controller shown and described in the Lyndon patent operates in two directions, does it not?

A. Yes, sir.

Q. 415. Do the parts which you have pointed out as the mechanical equivalent operate in two directions?

A. Yes, sir.

Q. 416. Can it be said that the parts that you have pointed out as the mechanical equivalents of said "controller" operate when moving in either direction to close the parts which you have pointed out as being the mechanical equivalent of the circuit mentioned in Claim 9 of the patent in suit?

A. Yes, sir.

Q. 417. Which parts have you pointed out as being the mechanical equivalent of the circuit?

A. I have not pointed out any particular parts as the equivalent of said circuit, as I said I did not find the equivalent of such circuit.

Q. 418. Then it would follow, would it not, that the parts which you have pointed out as the mechanical equivalent of the controller do not operate

to close any parts corresponding to a circuit, because you have been unable to find any such circuit?

A. I said that I did not find the physical equivalent of the circuit. But I do find the mechanical equivalent of the circuit as far as the opening and closing of the circuit in the controlling cylinder marked B on blue print KKK. If you choose, you can assume that opening and closing the circuit of the Lyndon patent would correspond to the opening and closing either the one or the other outlet valve through which the pressure fluid flows from the controller cylinder B shown on the blue print KKK.

Q. 419. Would you consider the outlet valves as the equivalent of the electrical circuit?

A. It would not be the equivalent to the circuit, but it would be the equivalent to the contacts and the pipes D, the mechanical equivalent of the electrical circuits.

Q. 420. Now, in pointing out what you have conceived to be the mechanical equivalents of the various elements mentioned in the claims of the Lyndon patent in suit, have you given any weight to the fact that Lyndon in the first paragraph of the specifications states that he has invented a new and useful improvement in "electro-mechanical water-wheel governors" and in which he refers to the succeeding paragraph as a specification of his new and useful improvements in a certain kind, namely, "electro-mechanical water-wheel governors?"

A. Yes, sir. Since in the Lyndon patent the specifications set forth the electrical means and electrical

contacts and electrical circuits to accomplish certain mechanical motions in the proper sequence, and certainly the mechanical equivalents of the alleged infringement would not in any way vitiate that, since not only in the alleged infringements but in the patent in suit the only thing that will accomplish the proper governing of the water-wheel is mechanical motion transmitted and imparted to the water-wheel gate, and, if desirable, also the by-pass valve. The means for obtaining the required mechanical motion in the Lyndon patent from the controller is by the use of electrical circuits and electrical currents, while in the alleged infringement the means employed for transmitting the mechanical motion to the water-wheel gate and the by-pass valve is by means of mechanical motion, the result in both instances being the same.

Q. 421. How would you define the term "mechanical equivalent"?

A. I should say that one device was the mechanical equivalent of another if in both devices the mechanical operation of the desired part or desired parts was accomplished the same with both devices.

Q. 422. Do you mean by that that when the same result flows from the use of the two separate devices?

A. The same result is accomplished by the two distinct devices.

Q. 423. Is it your opinion that the claims of the patent in suit are entitled to the same range of mechanical equivalence with the word "electro-me-

chanical" omitted from the title and the first paragraph of the specifications as with said term included?

Mr. Blakeslee: Objected to as calling for more than expert testimony. In fact it is calling for a legal conclusion and is attempting to get from the witness a definite and arbitrary application of the law of mechanical equivalence, irrespective of the specific counts of mechanical equivalence. As to the application of the law of mechanical equivalence, as we have before stated on the record, it is the province of the court to apply this law based upon the mechanical equivalents as found by the witnesses. In other words, to apply such law to the testimony of the witnesses in each particular instance in which such equivalence is traced.

A. I do not consider myself qualified to answer that question at all, because I am not at all familiar with the interpretation of such equivalence in patents as granted and issued from the United States patent office.

Q. 424. By Mr. Westall: Has what you understand to be the essence or principle or invention of the Lyndon patent gone into extensive use?

A. Yes; it has gone into extensive use.

Q. 425. How extensively?

A. Practically essential to the operation of a very great many water power developments, especially where that water power is used for the generation and ultimate transmission and distribution of electrical energy.

Q. 426. Have you sufficient knowledge to say approximately how many plants in this country have utilized that principle or invention?

Mr. Blakeslee: Objected to as not cross-examination unless the witness is asked to state of his own knowledge as to the number of such plants.

A. I could not state accurately of my own knowledge the number of such plants, but I can say of my own knowledge that the plants with which I am personally familiar, especially upon the Pacific Coast from Alaska to New Mexico and as far east as Denver, that the fundamental principle set forth in the Lyndon patent is in use in plants the aggregate power of which is not less than 100,000 to 150,000 horse power—probably not less than fifty such plants.

Q. 427. By Mr. Westall: With the disclosures, of the Lyndon patent before the public for approximately eleven years, have you ever known in all your engineering experience of a single electro-mechanical governor constructed and installed or practically used for the purpose of accomplishing the results of water-wheel regulation made out by Lyndon, constructed in exact accordance with the drawings and the specifications of the Lyndon patent in suit.

A. No; I know of none constructed in exact accordance with the details set forth by Lyndon.

Q. 428. Have you known of any employing the same number of magnets and solenoids and the same general arrangement of springs, circuits and dynamos?

A. Yes, sir; I have known of some that were used practically—perhaps not operating the same number—but operating upon the same general electro-mechanical principles.

Q. 429. Where have you known of these devices being used?

A. At various plants on the Pacific Coast, notably the Folsom Power Company on the American River near Sacramento, the San Joaquin Power Company, the Utah Light & Power Company, and the Telluride Power Company in Utah and Colorado.

Q. 430. Did they have this dynamo described by Lyndon?

A. They had the essential characteristics of the dynamo.

Q. 431. They did have a dynamo for the same purpose and in the same position?

Mr. Blakeslee: Objected to as indefinite as to what dynamo is being discussed.

A. I don't know.

Q. 432. By Mr. Westall: Did they have a solenoid corresponding to the solenoid 33 and close the circuits in the same general position?

A. They had solenoids and circuits, but I don't know and, in fact, I don't believe they operated in the same detail as set forth in the Lyndon patent, but they were known as electrical governors.

Q. 433. So that I understand that there were in operation certain devices known as electrical governors, but you do not know of any that were constructed with the same number of magnets and the

same arrangement of circuits as Lyndon discloses?

Mr. Blakeslee: Objected to as calling for a mere repetition of the testimony already given by this witness.

A. No.

Q. 434. By Mr. Westall: So that you have never had an opportunity of seeing the actual operations of the device constructed in accordance with the Lyndon drawings?

A. No, sir; I never have.

Q. 435. Which would you consider the cheapest form of installation, a device constructed in accordance with the Lyndon drawings or one in accordance with the alleged infringing devices as shown in the evidence?

A. I don't believe I can express an opinion as to which would be the cheaper.

Q. 436. As an engineer if you had charge of the installation of a water-wheel for substantially the same purpose and in the same position as that described as being on the line of the Los Angeles aqueduct, and you had your choice of an electro-mechanical governor constructed exactly or in substantial accordance with the description and drawings of the Lyndon patent in suit and one as shown and described in the alleged infringing devices, which would you choose?

A. I think from my knowledge of the successful water-wheel governing mechanism I should prefer to use the mechanical device as compared with any proven electro-mechanical governing device.

Q. 437. I am not speaking of electro-magnetic governors generally, but the specific one shown and described by Lyndon.

A. I think I should prefer to use the thoroughly satisfactorily operated mechanical devices rather than the device in strict accordance with the specifications of Lyndon, although I am absolutely convinced that the Lyndon device, as disclosed in the patent, could be made to operate and fulfill every requirement as set forth in the patent itself and as practical operation demands.

Q. 438. You have testified as to certain sequences of electrical energization. Is it not a fact, in your opinion, that unless the means to accomplish these successful energizations is read into the claims in the Lyndon patent the device would be inoperative?

A. No, sir; it would be thoroughly operative.

Q. 439. Would it be operative if instead of contacts being made successively they were made at the same time?

A. I don't think the device would work if all those contacts would be made absolutely at the same time, and I don't think the specifications and drawings of the Lyndon patent indicate for them to operate to open or close at the same time exactly. There is certainly nothing in the patent which indicates that it is the intention to have them all open or close at the same time. For instance, it is clear that 40 and 40a, or 41 and 41a, remain closed during many openings and closings of contacts 45a and 45,

and 101 and 103, and so on. The description of the patent indicates that very clearly.

Q. 440. Where does Lyndon say in the patent in suit that any of the contacts should be mercury contacts?

A. There is no statement in words to that effect, but Figure 6 shows contacts 40 and 40a, 41 and 41a, and 45a and 45, and by the drawing it clearly indicates that they are mercury contacts.

Q. 441. The drawing referred to does not show, however, that such mercury contacts are to be placed at contacts 103 and 104 of the Lyndon patent?

A. No, sir; contacts 103 and 104 are not shown in Figure 6 of the Lyndon patent.

Q. 442. So that mercury contacts at those points would have to be supplied by the one building or installing the device?

A. I think all contacts would have to be so supplied.

Q. 443. By "being ^{see} applied", of course, I mean to be chosen in preference to other contacts. Is that not true?

A. Yes, sir; the mechanical construction and operation of any device as contrasted with the drawings and specifications of the patent, in my experience, are always so developed.

Q. 444. Is it your understanding that when contact is made either at 40a or 41a that there is to be a contact at 45?

A. Not necessarily at the same instant.

Q. 445. How would a contact be prevented at the same time?

A. Simply by adjusting the contact 45a or the amount of mercury in the contact 45, so that either contacts 41 and 41a or contacts 40 and 40a might be completely made without necessarily closing contact 45a and 45, since contacts 45a and 45 are operated by the lever arm 43 while contacts 41 and 41a and 40 and 40a—

Q. 446. The length of the contact points and the height of the mercury in the cup does not indicate in this drawing Figure 6 in the Lyndon patent that there is to be any difference in the time when the contact is to be made, as has been attempted to be shown in the blue prints which you have referred to on your direct examination?

A. No; the drawings are so small that it would require a good deal of imagination to say that the drawings indicate any difference in those contacts—I mean the drawing of Figure 6 of the patent in suit.

Q. 447. The patent nowhere states that the contacts at 45a, 46a, 100 and 101 would not be made simultaneously, does it?

A. No; I do not think there are any definite statements made to that effect, but it is apparent in studying the patent that if the conditions exist so that neither contacts 41 and 41a or 40 and 40a are closed. You can close all the contacts you want and you would get absolutely no results, since contacts 41 and 41a, and 40 and 40a are contacts which

through certain devices place in rotation the shaft operating the water-wheel gate. And if neither of those are closed it does not make any difference what happens to all the rest of the contacts. The governing mechanism is then inoperative. It would indicate to me that it was the intention to first either close 41 and 41a or 40 and 40a, depending on the manner in which the speed was to be changed, and then have the subsequent contacts made as required in the operation of the governing mechanism.

Q. 448. Is this not a fact: that at line 59, page 2, of the specifications of the patent in suit, reading: “* * * so that when the lever 26 and the rod 35 move in either direction the lever 43 will be moved in one given direction. In such movement of the lever 43 contacts 45a, 46a, 100, 101, carried thereby, will connect with fixed contacts 45, 46, 103 and 104 to close the circuit of the returning magnet and the compensator-magnet, respectively” Lyndon indicates clearly that said contacts are to be simultaneous?

A. No; I do not think that is a proper conclusion from the language there used.

Q. 449. If Lyndon did mean that, it is a fact, is it not, that the Lyndon patent would not effectuate the results aimed at by Lyndon?

Mr. Blakeslee: This appears to us to produce a condition of negative pregnant. We do not think the question calls for any intelligible answer in that it attempts to set up a meaning for the patent and then knock it down.

A. I can only answer that in this way: that if Lyndon had an idea in this patent that when he closed one set of contacts he closed all the contacts simultaneously, and kept them all closed, no contact being open till they were all open, none closed till they were all closed, he certainly could not effect the thing which he specifically sets forth that he desires to accomplish by the patent.

Q. 450. By Mr. Westall: If, therefore, the language which I have quoted in the preceding question from line 59, page 2, is to be accepted literally and the circuits controlled by the contacts 45a, 46a, 100 and 101, are to be made simultaneously, then the Lyndon patent does not describe an operative device? Is that not true?

Mr. Blakeslee: Objected to as not correctly following the answer to the previous question.

A. I cannot interpret what you have in mind by using the word "literally". But, beginning with line 62, "in such movement of the lever 43 contacts 45a, 46a, 100 and 101, carried thereby, will connect with fixed contacts 45, 46, 103 and 104 to close the circuit of the returning magnet and the compensator-magnet, respectively", if that can be so narrowly interpreted as to mean that those two sets of contacts are always made at the same instant and broken at the same instant, then I think the particular device would not work very satisfactorily.

Q. 451. By Mr. Westall: Would it work at all and produce the results of regulation of the water-gate and by-pass valve?

A. Yes, it would work at all, but as is always the case with such contacts as described in the patent, there are, in my experience of a great many years, adjusted so as to accomplish the desired results. I know of no electrical contacts that are not subject to such adjustment in the operation of any device through electrical circuits being opened or closed.

Q. 452. Is there anything new with Lyndon in the use of solenoids and magnets to actuate lever arms or to throw into or out of operation clutches?

A. No, sir; I do not think so.

Q. 453. So there is nothing broadly new, you say, in the specific means employed by Lyndon as disclosed by the patent in suit to effectuate the inverse operation of the by-pass valve and the water-gate? Is that correct?

Mr. Blakeslee: Objected to as indefinite and vague.

A. I do not think there is anything new in the electrical means, but I think the ultimate result is certainly something decidedly new, and certainly the ultimate result whereby mechanical motion is transmitted to the water-gate and to the by-pass valve so that they are mutually operated, sometimes inversely and at other times operated so that when the water-gate is absolutely still and not in motion at all the by-pass valve is slowly being returned to whatever position is being desired, is new.

Q. ~~5454~~ By Mr. Westall: So that the novelty of the Lyndon patent in suit, if any, would consist in

the results rather than in any specific form of means to effectuate those results.

A. I should say that is correct.

Q. 455. On page 35, line 3, of the typewritten record of this case, counsel for complainant has used the following language as descriptive of the devices which he evidently considers an infringement of the claims or some of the claims of the patent in suit: "A governor, a water-gate, a by-pass, a means whereby the water-gate and by-pass are inversely operated under the control of the governor." Would you say that a device which could be appropriately so described would embody the mechanical equivalents of the combination of the elements mentioned in any of the claims of the patent in suit?

A. Yes, sir.

Q. 456. Which claims particularly could you point out?

Mr. Blakeslee: Both the preceding question and the last answer are objected to, particularly with the intimation that complainant's counsel has thought that the subject matter therein constitute an infringement of the patent in suit. If the record shows any proof that such subject matter is contended to be an infringement of the patent in suit, let such parts of the record be considered. The part of the record referred to does not so state and was not in the words of the witness and was not in the nature of a stipulation. Counsel is manifestly trying to borrow such language and to utter it from his own mouth as an arbitrary word-structure which he is

attempting to get the present witness to compare with the patent in suit. Unless counsel can show such language to have been used by the witness in defining structures alleged to infringe the patent in suit, he is notified that he is going beyond cross-examination and is making the witness his own, and the notice and motion previously given and made with respect to such purported cross-examination is hereby repeated with reference to the entire line of attempted cross-examination of this nature.

A. Claims 6, 7 and 8.

Q. 457. By Mr. Westall: The drawings of the Lyndon patent indicate, do they not, that the water-wheel is in horizontal position rather than vertical?

A. It would seem that the water-wheel is vertical, if it is contained within the cylinder 2 of Figure 1.

Q. 458. Would not the shape of the pipe at Figure 2 and the emergence of the shaft from the top of that cylindrical pipe 2 indicate very clearly that a horizontal water-wheel was intended to be used in that structure?

A. No; I do not think so. I think it would rather clearly indicate that it was a vertical water-wheel. Shaft 3 is vertical as shown in Figure 1.

Q. 459. How, then, do you understand the shaft 3 to be connected to the water-wheel in the structure shown in Figure 1 of the patent in suit?

A. Figure 3 is the water-wheel shaft. Line 71, page 1, 3 is the main shaft connected at one end to the water-wheel.

Q. 460. That shaft is shown in vertical position, is it not?

A. Yes, sir.

Q. 461. If that is the case, could the water-wheel possibly be in vertical position?

A. The shaft is connected to the water-wheel and common engineering practice is generally understood to mean that if the main shaft is vertical the wheel itself will be vertical.

Q. 462. By Mr. Blakeslee: Do you mean the plane of rotation?

Mr. Westall: Yes, sir.

Mr. Blakeslee: Then you don't understand each other.

A. If your question implies what is the plane of rotation of the water-wheel, I would understand Figure 1 as showing a water-wheel with the plane of rotation horizontal, transmitting power to a vertical shaft 3 in Figure 1.

Q. 463. By Mr. Westall: The water-wheel of the alleged infringing device is not a water-wheel revolving in a horizontal plane, is it?

A. As far as I could interpret the photographic exhibits in this case, no sir. The water-wheel is revolving in a vertical plane, but the main shaft is horizontal.

Q. 464. Is it not a fact that would be impossible to place the water-wheels in the alleged infringing devices in a position so as to revolve in a horizontal plane without vital changes in the structure of the

device as would clearly avoid a change of mechanical equivalence?

A. I do not think it would be impossible to place them so that the plane of rotation would be horizontal. There would be certain changes, but I do not believe those changes would be what you have evidently in mind, if you term them vital changes.

Q. 465. How would you change the construction shown in the alleged infringing devices so as to have it revolve in horizontal plane?

A. I would simply make a modification so that the main water-wheel shaft ran vertically instead of horizontally. The plane of rotation of the water-wheel would be horizontal instead of vertical. And other details in conformity therewith.

Q. 466. How would you arrange the main nozzle and the by-pass nozzle?

A. Simply rotate them through 90 degrees and have them operate so that the main nozzle would operate on the wheels rotating in a horizontal plane, and the by-pass valve so that the water from the by-pass would not strike the buckets of the wheel at all. It would be merely a modification in the design of the alleged infringing devices so that we could use what are known as water-wheels of the vertical type as contrasted with those used of a horizontal type.

Q. 467. And you believe that if that change were made the device would not be vitally different in its principle of operation from the construction shown in the blue print before you at the present time?

A. No, sir. In fact, I personally know of water-wheels having been so governed and by "so governed" I mean by devices practically the equivalent of the alleged infringement, and applying to both vertical water-wheels and horizontal water-wheels.

Q. 468. Do you consider the exact placing of a water-wheel as affecting the question of equivalence in any degree?

A. No, sir. That is, by your use of the words "placing the water-wheel", whether the water-wheel is a so-called vertical type or a so-called horizontal type.

Q. 469. Suppose that the water-wheel as indicated on line-drawing Complainant's Exhibit U were moved so that it occupied the position substantially of that marked in a red dotted line which I have just placed on said Exhibit U: Would that in your opinion affect the application of the doctrine of mechanical equivalence in any way?

Mr. Blakeslee: Objected to as not cross-examination and as assuming an arbitrary arrangement not put before the witness in the direct examination, and as indefinite and vague.

A. No, sir; because all that would be necessary in the operation of your governor would be to rotate the whole mechanism about the center of the shaft of the water-gate or needle valve—rotate it through 180 degrees, and you have the exact equivalent.

Q. 470. By Mr. Westall: I am assuming in placing the dotted line on the drawing that the plane of the rotation of the water-wheel will be the same

as indicated, and that no other change will be made in the device as shown by that drawing.

A. In that case all that would be necessary would be to move the governor mechanism so that it would occupy a position on the sheet lower down on the sheet or nearer the bottom, so that the water-gate or needle valve would impinge on the appropriate point on the circumference of the wheel.

Q. 471. But my question is, without changing the relative positions of the dotted water-wheel and the main valve and by-pass valve.

Mr. Blakeslee: The same objection.

A. If you have a water-wheel in the general position of the dotted red line, you would have an absolutely inoperative mechanism, because you have not assembled your water-wheel and your water-gate valve properly. It is evident that if you have a water-wheel so that the nozzle would strike the buckets and then you move the water-wheel and do not move the nozzle, you get an inoperative condition. But you certainly have not changed the equivalence of any of the mechanical parts whatsoever.

Q. 472. Do you think that the water projected from the by-pass valve in the construction which I have indicated in the last preceding questions would interfere with the rotation of the water-wheel if the main nozzle were directed against the buckets in the same general position as indicated by the red dotted line?

Mr. Blakeslee: The same objection is noted, and

this line of questions is particularly objected to as confusing, and not cross-examination, inasmuch as counsel has manifestly attempted to bring the wheel in a position with relation to the by-pass which is not pointed out by him except by the irregularly plotted dotted red line.

A. Certainly the water of the by-pass valve would interfere, inasmuch as the water of the by-pass valve would hit the buckets on the wheel.

Q. 473. By Mr. Westall: Would it prevent the rotation of the wheel necessarily?

A. It would not necessarily prevent the rotation of the wheel, but you would have water delivered by the main water-gate valve tending to move the wheel in one direction, and water delivered by the by-pass valve tending to move the wheel in another direction.

Q. 474. But such a construction, as I understand you, would not affect the mechanical equivalence of the parts which you have heretofore pointed out.

A. It would not affect the mechanical equivalence of the parts, but it would be an absurd arrangement of the governor mechanism in relation to the position of the water-wheel and would be inoperative. But it would not affect in any way the mechanical equivalence of the various parts.

Mr. Westall: I believe that is all.

REDIRECT EXAMINATION

By Mr. Blakeslee:

Q. 475. In other words, as I understand your answer to the last question put in cross-examination, the governing device of the Lyndon patent as portrayed in part in Complainant's Exhibit U would be varied in its several aspects if desirability and efficiency, without totally interfering with the operation of the water-wheel? Is that correct?

A. Yes, sir; I should say, in order to make my understanding clear, that such relation of the water-wheel and the governing mechanism would be just as sensible as for a man to put his hat on his feet and his shoes on his head.

Q. 476. In that connection, would the by-pass really be a by-pass?

A. No, sir; it would simply be an extra nozzle working on the wheel adversely to the main nozzle.

Q. 477. Now, as to the mechanical equivalence between the various devices of the alleged infringing devices in the photographs and drawings and blue prints in evidence, and the specific features of construction and combination of parts disclosed in the Lyndon patent in suit, do you not find in the Lyndon patent in suit mechanical features as well as electrical features?

A. I do.

Q. 478. Point out some of them briefly in the Lyndon patent in suit, Figure 1.

Mr. Westall: We admit that there are mechani-

cal features as well as electrical features in the Lyndon patent.

Q. 479. By Mr. Blakeslee: And whenever you have an electrically-controlled feature or a part, the movement of which is electrically controlled, does not a mechanical action take place after such electrical or electro-magnetic control?

A. In every instance; yes, sir.

Q. 480. For instance, referring to the armature 17 of the electro-magnets 15 and 16, when each of such magnets is energized is not such armature and the lever 103 moved, and do they not execute a mechanical action?

A. They do; yes, sir.

Q. 481. Therefore, how would you briefly describe the transmission through the agency of an electrical path such as that through the circuit including the wires 106, with respect to the action of the rigid element, if the latter were substituted for such electrical path, to move the armature 17?

A. Exactly the same result in the two instances, the means in the one case being an electrical circuit with the current flowing therein, and the other being an actually mechanical transmission of the motion.

Q. 482. And after in each instance such electrical circuit performs its function, does not a mechanical action follow pursuant thereto?

A. Absolutely, in every instance, yes sir.

Q. 483. Then, if I understand your testimony correctly, Lyndon simply employs an electrical impulse in substitution for the push and pull or twist

of the mechanical form, such, for instance, as the various levers, arms, spindles, stems, cranks and the like, of the alleged infringing devices as shown in Complainant's Exhibit KKK.

A. Yes, sir; that is true.

Q. 484. Now, coming down to the relation between the controller and the electro-magnetic device, you have described the controller as consisting of a number of parts responsive to the actuation of the electro-magnetic device and the movement of the core 34 within the solenoid 33. Treating the solenoid 33 as an electro-magnetic device, which part governs the action of the other—the electro-magnetic device or the various parts connected up with the core 34?

A. The core 34 is given mechanical motion as the result of the electrical current coming in 33, and the object of the electrical devices is, in effect, to transmit electrically the mechanical motion of core 34 through armature 17 to the bevel gear 11, etc. The mechanical motions being the results in every instance.

Q. 485. Which of the several features in my last question is more essential, the controller or prime mover?

A. Electro-magnet 33.

Q. 486. And that corresponds more particularly with what part of the alleged infringing devices in Complainant's Exhibit KKK?

A. The controller cylinder B.

Q. 487. Now, in your cross-examination, you

referred to the part M in Exhibit KKK as a clutch controlling the by-pass, and you also refer to the control of such by-pass through the parts B and A. Which do you wish to consider more particularly as the clutch in correspondence with the clutch referred to in Claim 8?

A. The only use of the word "clutch" in Claim 8 is in line 89: "A clutch, adapted to connect said operating device for the by-pass valve with the water-gate-operating shaft", which refers to clutch 57 58 of Figure 1.

Q. 488. Now, what part of the alleged infringing device in Exhibit KKK is the mechanical equivalent of that clutch?

A. Dashpot M.

Q. 489. And what electro-magnets control the the clutch 57 58 in the Lyndon patent in suit?

A. Electro-magnet 64.

Q. 490. And what contacts control the energization of that electro-magnet?

A. Contacts 103 and 104.

Q. 491. Then when you refer to electro-magnets 15 and 16 as controlling the clutch, what clutch do you wish us to understand is controlled by those electro-magnets?

A. The reversing clutch, consisting of the bevel gears 9, 10, 11.

Q. 492. And not, I take it from your last testimony, the clutch 57 58?

A. No, sir. I do not remember of ever having referred to electro-magnets 15 and 16 having any-

thing whatsoever to do directly with the operation of the clutch 57 58.

Q. 493. But only directly, I take it, with the operation of the by-pass through the power imparted by shaft 20; is that correct?

A. That is correct.

Q. 494. Now, as to the sequence of energization of the several electro-magnets 15 or 16, 32 and 64, and conversely the sequence of de-energization thereof within the meaning of the Lyndon patent in suit, do you take it that the use of the word "either" in Claims 6, 7, 8 and 9, for instance, has a bearing upon such claims and the regulation, if necessary, of the several contacts controlling the energization of said electro-magnets?

A. Yes, sir; I think it has a relation, since the use of the word "either" in those claims mentioned in your question, as set up in the Lyndon patent, refers, in effect, to energizing either magnet coil 15 or the energizing of magnet coil 16, it depending on which one of these two is energized as to the direction in which the water-gate-mechanism is operated.

Q. 495. And, furthermore, if the by-pass were to be employed only in the closing actions of the water-gate, the sequence of energization would not include any energization for operating the by-pass in the opening of the water-gate, would it?

Mr. Westall: Counsel for the defense calls the attention of the court to the fact that many of these questions on redirect examination are very grossly leading and are objectionable on that ground, and

counsel objects to the question as leading.

Mr. Blakeslee: If counsel wishes to object to any questions we will ask him to do so, and will try to consider the objection. But attention is called to the fact that the examination of the present witness was very protracted and that the cross-examination has gone very extensively and repetitiously, at times, over matters which have been referred to, and we are merely attempting to bring this examination to as speedy an end as possible with a fair questioning of the witness to clear up any points which may be left obscure by the cross-examination.

A. No, sir.

Q. 496. Now, furthermore, as in Claims 3 and 4 no by-pass is mentioned, this same term "either" is used with respect to the direction in which the water-wheel may be governed, what have you to say with respect to the sequences of such energizations and de-energizations, and the inclusion or exclusion of such sequences of the energization and de-energization of electro-magnet 64 controlling the clutch which operates the by-pass valve.

A. I should say that the use of the word "either", especially in Claims 3 and 4, would indicate to me that the contacts could be made energizing either coil 15 or 16, but not necessarily contacts made so as to energize magnet 64 and placing in operation the clutch 57 58 or moving the by-pass at all.

Q. 497. Now, with respect to the location of the water-wheel to be controlled as to its speed in accordance with the Lyndon invention, what have you

to say as to the use or general knowledge of water-wheels at the time of the application for the Lyndon patent in suit, concerning their mounting, and the planes of mounting, or planes of rotation?

A. A great many water-wheels were certainly in use and well known that were so-called horizontal water-wheels, and a great many so-called vertical water-wheels. In fact, it is merely the convenience or adaptability in each individual case which would indicate which was to be preferred. There is absolutely no essential difference whether it is mounted horizontally or vertically.

Q. 498. Now, I take it from your previous testimony that Lyndon shows and describes in his patent in suit one form or combination of parts and features such as that portrayed in the drawings. In practice, with the invention, within your explanation and application of the principles thereof, can you conceive or tell us about other arrangements or adjustments which are mechanically evident so as to adapt the invention to the varying conditions of service, and, particularly, we will say, with respect to the use of the by-pass valve 48?

A. The invention as described in the patent in suit, as I would interpret it, indicates a particular combination of elements and their adaptability for certain purposes, and it is apparent to one who is experienced and skilled and has knowledge of the results to be accomplished, that many different arrangements might be made of the devices as disclosed in the patent. I think I have mentioned a very great

number, if necessary or desirable, especially as regards the best position of either the water-gate valve or the by-pass valve, to be in accordance with certain specific requirements that might be found in individual cases. I have had experience myself with cases where the best operative position of the water-gate would be very nearly fully open and in other cases the best position would be very nearly entirely closed. So that you might say the normal position might be either one of those two. And the same thing applies absolutely to the position of the by-pass valve 48, depending entirely upon the conditions of operation and the requirements for the use of the water, and so on, all of which, to my mind, are apparent to anyone experienced and having knowledge of such devices, from the disclosures in the patent itself.

Q. 499. Now, referring to Claim 7, there is the statement in lines 75, 76, 77 and 78: "So as to control such valve inversely to the control of the water-gate, during the governing action of the water-gate." Considering such language with the rest of the claim, what do you take it the meaning of the claim is, with respect to such inverse movement of the by-pass valve, if, for instance, it be in both directions?

A. I would interpret that statement contained in the question, beginning from line 75, "so as to control such valve", as meaning the by-pass valve "inversely to control the water-gate during the governing action of the water-gate" to mean that the control was inverse in the two valves during the governing action of the water-gate or during the actual

motion of the water-gate.

Q. 500. And during the action of the water-gate and the governing action, may or may there not be one or more movements of the by-pass valve after it has left the position it assumes when no governing action has taken place?

A. Certainly; there may be a number of intermittent motions of the by-pass valve during the motion of the water-gate itself.

Q. 501. And, therefore, if the by-pass valve only leaves its position assumed when no governing action has taken place upon the movement of the water-gate in one direction, is it or is it not possible for there to be opposite movements of the by-pass valve during the governing period?

A. Yes, sir.

Q. 502. Now, if, as you have previously testified, the use of the Lyndon governing invention is to correct those unfavorable or dangerous conditions which exist both in connection with the supply of water through long pipe lines at a high head and through short pipe lines at a low head, do you or do you not think it fair to assume that the invention is equally practiced or utilized in meeting either one or the other of these unfavorable or dangerous conditions in governing the water-wheels?

A. Yes, sir; and it is particularly set forth in the specifications by Lyndon. He desires to prevent excessive action of the governor in either direction. I refer to lines 36 and 37 of page 1. Further, on page 4, beginning with line 88, "It is here to be noted that

all water-wheel governors as made today must accomplish their governing only at such a speed as the acceleration or retardation" either one "of the water in the column of the pipe can be accomplished."

Q. 503. Now, assuming therefore for the purposes of this question, that in Exhibits U and V and Exhibits KK and KKK, the by-pass valve is normally in or approximately at a closed position when the governing action is not taking place, I will ask you to state whether you do or do not think that such arrangement and setting of the governor apparatus, including the by-pass valve, comes fairly within the meaning of the invention set forth in the Lyndon patent in suit?

A. It certainly does, and the best possible indication of that is, to quote again, the words that I have just quoted in my last answer on page 4, lines 88 to 93, inclusive, that "all water-wheel governors as made today must accomplish their governing only at such a speed as the acceleration or retardation of the water in the column of the pipe can be accomplished". It specifically indicates that the by-pass shall be adapted in its opening to the best accomplishment of appropriate retardation or acceleration of the water in the pipe line.

Q. 504. And, looking further on, namely, at the substance of lines 96 to 98, inclusive, after the comma in line 96, do you or do you not take it from such language that the present invention is to meet and provide for and correct the conditions which were

known previously to exist on either side of the case as now considered, as well as on both?

A. Yes, sir; because the Lyndon patent specifically sets forth what is to be accomplished as a result of the invention is that either the retardation or acceleration of the water in the pipe shall be accomplished at just the rate that is proper, and that the time element is removed entirely from the gate valve and the water-wheel, and that the water in effect is taken care of in the by-pass, indicating that whatever adjustment is necessary for the normal position of the by-pass may be made in order to take care of the water.

Q. 505. And bearing upon this distinction, or this clear recognition of the two uses or different applications and utilizations of the governing action of the Lyndon patent in suit, do you or do you not consider it significant that in Claim 6, for instance, the words "either direction" are used with respect to the operation of the water-gate, but are not used with respect to the operation of the by-pass valve.

A. Yes, sir; and especially is that significant in Claim 7, beginning with line 78 and reading "and means for returning the by-pass valve to normal position on completion of governing movement of the water-gate operating means".

Q. 506. With respect to your distinction between physical equivalent and mechanical equivalent, I will ask you to state in a single answer your distinction between these two equivalences.

A. I meant to be understood by "physical equiv-

alent" that they are physically the same in detail and in construction and in parts; that in mechanical equivalent the same mechanical results may be obtained from the two. For instance, a fly-ball governor is not the physical equivalent of a dynamo, but the results that may be accomplished with a fly-ball governor driven at variable speeds would be exactly the same as the results that may be accomplished with a variable electro-motive force produced by a dynamo operated at variable speeds.

Q. 507. And do I take it that in so defining a physical equivalent you would more or less imply shape, weight, mass, delineament, etc., than in defining a mechanical equivalent?

A. Yes, sir.

Q. 508. Now, going further into the analogy between the controller called for in the Lyndon patent in suit and the part marked B by you on Complainant's Exhibit KKK, may it not be said that the part between the two pistons in the controller cylinder bears an analogy to some part in the controller of the disclosure of the Lyndon patent in suit?

A. It bears some analogy, perhaps. In fact the part D between the two pistons corresponds to the soft iron core 34 of the Lyndon patent, motion being transmitted to each, namely, the part between the two pistons in the alleged infringement and the soft iron core as the result of variation in speed of the water-wheel shaft.

Q. 509. I will ask you what these two parts or pistons do in the action of the controller?

A. I have already testified that in effect they act to open or close the openings to the two pipes DD, accomplishing the same result as the making of contacts in the Lyndon patent.

Q. 510. And is there anything in that cylinder which tends to resist such movements of such pistons?

A. The pressure of the fluid, whatever it may be, which is transmitted through the two pipes DD to the cylinder with its piston A.

Q. 511. And in the Lyndon patent in suit is there anything tending to resist the movement of the core of the solenoid 33?

A. Yes, sir.

Q. 512. What is that?

A. Springs 27, 28, 29 and 38.

Q. 513. And is there one or more contacts controlled by the movement of the core of the solenoid 33 in opposition to such resistance?

A. There are two contacts; yes, sir.

Q. 514. Can you compare that duality of the two contacts with any similar provision shown in Complainant's Exhibit KKK.

A. Contacts 41 and 41a might be compared with the opening in one of the pipes D, while contact 40 and 40a might be compared with the opening of the other of the two pipes D.

Q. 515. In the Lyndon patent in suit you have testified about two electro-magnetic devices which control the clutch, 9, 10 and 11, throwing in the clutch, so that the shaft controlled thereby operates

in one direction or the other. How does the provision and action of the two pipes D compare with the provision and action of these two electro-magnetic devices, between 15 and 16?

A. It may be said to be compared, one of the pipes corresponding to the electro-magnet 15 and the other pipe to the electro-magnet 16, or, perhaps, the wire on the electro-magnets to compare with the pipe, the pipe in one case allowing the pressure fluid to flow and in the other case the wire allowing the electric fluid to flow.

Q. 516. You have pointed out the electric circuit control on the electro-magnet 64 which throws the by-pass in or out of operation. Do you find in Complainant's Exhibit KKK any system or group of parts acting upon the clutch M controlling the by-pass valve?

A. I should say that the corresponding mechanical equivalent of the circuits controlling the magnet 64 which operates the clutch 58 57 would be the oil which circulates within the dashpot M.

Q. 517. And what do you find acting upon this oil between the same and the shaft F?

A. I find a lever arm which is not lettered but which I now give the letter N.

Q. 518. And what analogy, if any, can you draw between these parts and the circuit of electro-magnet 64?

A. I suppose the lever arm 61 might be made to correspond with lever arm N.

Q. 519. And, further, as to any analogy shown

between the parts actuating the clutch M and the shaft F and the means controlled by and also including the circuit through the electro-magnet 64?

A. Well, I should say the only thing I could indicate would be that the control in the alleged infringement comes from the controller cylinder B in exactly the same way as the control comes from solenoid 33 in the Lyndon patent.

Q. 520. You have pointed out certain circuit controllers between solenoid 33 and the actuating parts of the Lyndon patent disclosure. Do you or do you not find any parts extending from the controller B between which and such circuit controllers any analogy can be drawn?

A. I find the two pipes DD which can be said to correspond with the electrical circuit.

Q. 521. And how with respect to the action of the two pistons of B with respect to the orifices of the pipes D?

A. The pair of pistons within the controller B may be said to correspond with the contacts 40 40a, 41 and 41a, of the Lyndon patent controlling the delivery of the liquid to the pipes D.

Q. 522. Now, as to these plants which you have approximated at fifty which you have said, according to your information, are so organized as to operate in accordance with the invention of the Lyndon patent in suit. Can you or can you not say whether there is mechanical equivalence between their organizations and the organization disclosed in the Lyndon patent in suit?

but indirect
it is the
variation in
speed is caused

A. I should say they are mechanical equivalents of the system of governor disclosed in the Lyndon ~~of the system of governor as disclosed in the Lyndon~~ to accomplish the same things in these various plants as regards the control of the water to the water gate and to the pipe line as set forth in the Lyndon patent.

Q. 523. Do you know of any such plant among these same fifty in number which has been operated in connection with cement works?

A. Yes, sir.

Q. 524. What conditions were to be met with there, and how were they met with?

A. The conditions to be met were the control for constant speed on account of the great variation in load at the cement mill, and results were accomplished with the use of the by-pass valve, reducing the consequences of either excessive retardation or acceleration of the water in the pipe line, as well as to the water tunnel which terminated in the pipe line.

Q. 525. What can you say further with respect to the operation of the embodiment of the Lyndon invention in that plant responsive to the conditions of service there met with?

A. The essence of the Lyndon patent, as I understand it, was adapted to that plant in connection with the control of the water-gate and the required operation of the by-pass valve.

Q. 526. Was this of limited or extensive value and advantage in this instance?

A. Extensive value, because prior to the introduction of the system of governing it was impossible for a company to give satisfactory service.

Q. 527. Do you find any parts or features of the alleged infringing structures as portrayed in Complainant's Exhibit KKK, for instance, which, in your opinion, as one skilled in the art as a mechanical and electrical engineer, would require more than the ordinary engineering skill to build and provide in utilizing the invention of the Lyndon patent in suit, if it were desired to construct a purely mechanically installation and embodiment, in contradistinction to one partly mechanical and partly electro-mechanical, in accordance with that described and pictured in the Lyndon patent in suit?

A. I don't think it would require any extraordinary engineering ability from one skilled in the art to construct the governing mechanism as set forth on blue prints KKK, after having had available the disclosures of the Lyndon patent. There would be mechanical details to work out, but the principles are all there.

Mr. Blakeslee: That is all.

RE CROSS EXAMINATION

By Mr. Westall:

Q. 528. How would you define a by-pass?

A. I would define a by-pass as an extra or separate outlet. Applied to this particular case, it would be an outlet for water so that it would not be necessary to have all of the discharge go through one

opening, but to actually use the name itself, to by-pass the water or send it by or get it by through another separate opening.

Q. 529. Would the auxiliary nozzle disclosed in Exhibits U and V be any the less a by-pass because the water ejected therefrom might strike the buckets and interfere with the operation of the water-gate?

A. It would be no less a by-pass from the standpoint of the pipe line, but it would be something other than a by-pass so far as the wheel is concerned.

Q. 530. The additional function without any other change would not lead you to call it by any other name than a by-pass?

A. I think I would. I would call it a second water-wheel nozzle.

Mr. Westall: That is all.

(It is stipulated that the party taking depositions will furnish to the opposite party a copy of the said depositions, the cost of such copy to be taxed as part of the cost against the losing party.)

(By consent of counsel for both parties an adjournment is now taken until Friday, January 30, 1914, at the office of counsel for the Complainant, in Los Angeles, as heretofore.)

February 16, 1914, P. M.

E. F. SCATTERGOOD, a witness previously subpoenaed, sworn and examined on behalf of Complainant, being recalled for further examination,

532 27 insert "Los Angeles, Cal., February 3, 1914.
3 o'clock P. M.

This being the time and place to which the further taking of proof in this matter was by consent of counsel continued, the said taking of proofs is now resumed.

Present:

Raymond Ives Blakeslee, Esq., solicitor for complainant.

Joseph F. Westall, Esq., solicitor for defendant.

Mr. Blakeslee:—We offer in evidence on behalf of Complainant a printed copy of the charter of the City of Los Angeles bearing the certificate of the city clerk of the City of Los Angeles, under date of the 2nd day of February, 1914, that said printed copy is a full, true and correct copy of the city charter of the city of Los Angeles as amended March, 1913, and we offer the same and ask that it be marked as Complainant's Exhibit MM.

Mr. Westall:—Counsel for defendant objects to the document referred to as incompetent, irrelevant and immaterial, as not being properly certified and as not being the best evidence.

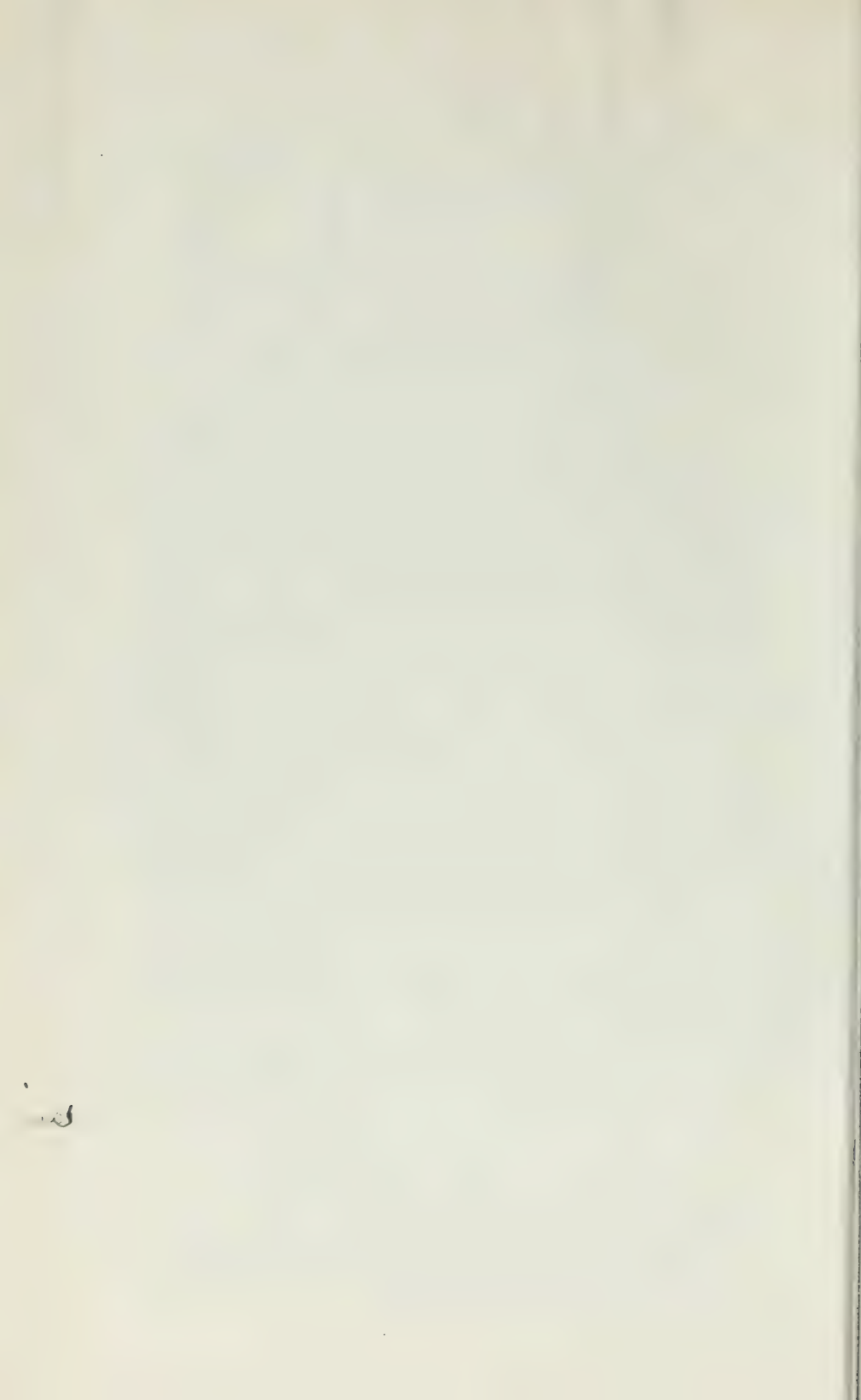
(The said document so offered in evidence is marked by the Examiner as Complainant's Exhibit MM.)

(By consent of counsel for both parties an adjournment is now taken until Friday, February 6, 1914, at 2 o'clock P. M.)

UNITED STATES OF AMERICA,

Southern District of California:—ss.

I, I. Benjamin, Special Examiner in Chancery, duly appointed and certified as



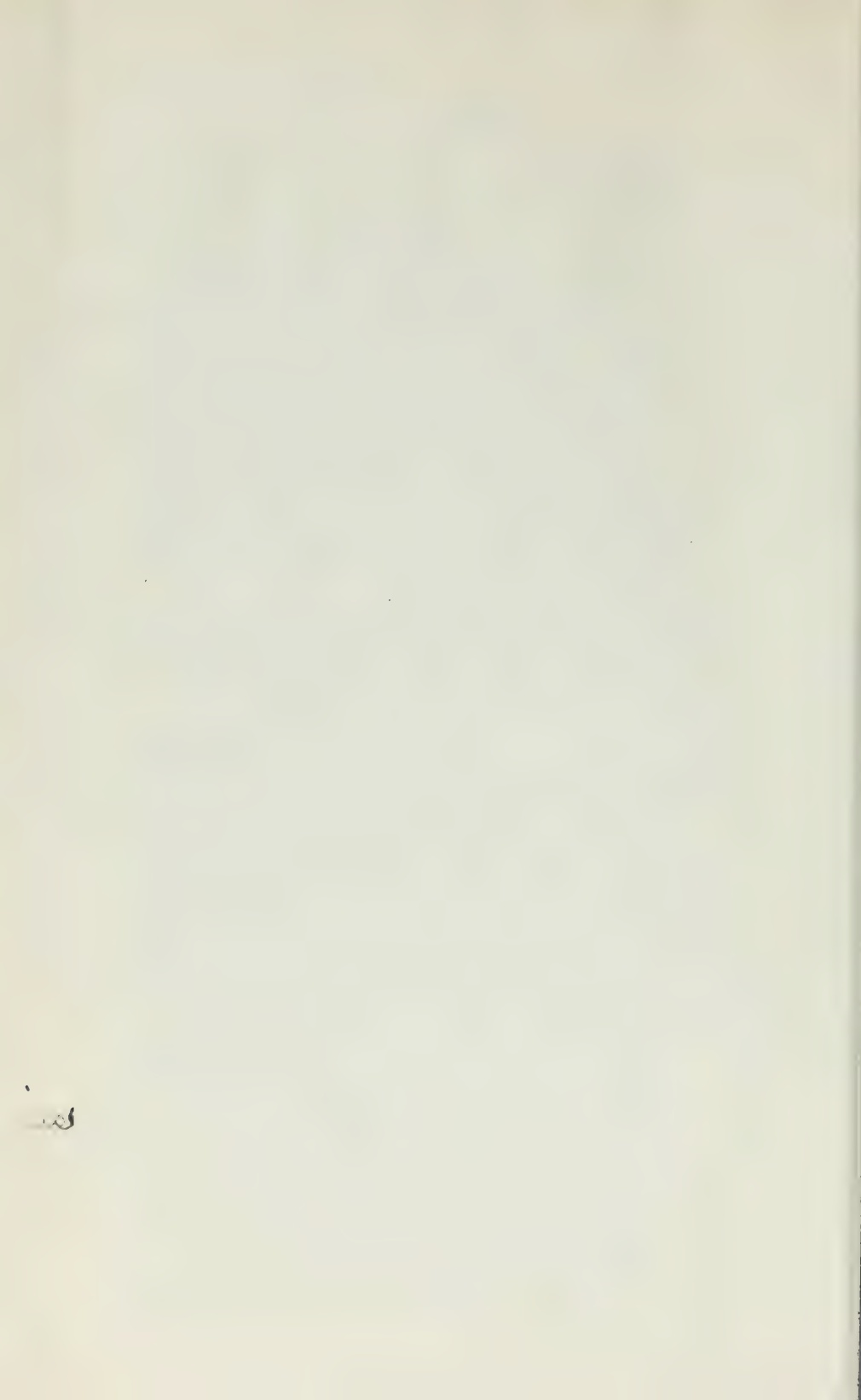
such in the above entitled case, do hereby certify the foregoing to be a full, true and correct transcript of the proofs taken in said case before me upon the several dates therein specified and all the proofs so taken up to this date. I further certify that this certificate is made with the reservation on behalf of the several witnesses who testified in said cause to read over their said depositions and, if they so desire, to correct the same, an opportunity for such reading over and correction not having as yet been available to the said witnesses.

In witness whereof I have hereunto set my hand this eleventh day of February, 1914.

I. Benjamin,

Special Examiner in Chancery.

Mr. Blakeslee:—Complainant also offers in evidence a blue print containing three numbered figures with lettering and unnumbered figure, and also inscribed with matter pertaining to the several figures, the same further bearing an indorsement of the title of this case and the words and figures “Prepared by me in further illustration of my testimony previously given in this case. Dated February 12, 1914”. and under said latter indorsement, signed “Geo. J. Henry, Jr., (Complainant)”, the same having been received this day through the mails by counsel for complainant from the complainant, responsive to a request to complainant made by complain-



ant's counsel during the preceding week, and I ask that the same be marked complainant's Exhibit OO. This exhibit is offered for the purpose of facilitating the presentation of this case to the Court and clearly defining or assisting in defining the issues presented in this case.

Mr. Westall:—Counsel for the defendant objects on the ground that the drawing and purported explanations thereon are incompetent, irrelevant and immaterial, no foundation laid, and that the said explanations are hearsay.

(The Examiner thereupon marks the said blue print as Complainant's Exhibit OO.)

Mr. Blakeslee:—Similarly, Complainant offers in evidence a further blue print showing four numbered figures of drawings and one unnumbered figure of drawing, to which is similarly applied descriptive matter pertinent to the several figures, and which is similarly indorsed with the title of this case and also indorsed "Prepared by me in further illustration of my testimony previously given in the case. Dated February 12, 1914," and signed "Geo. J. Henry, Jr., (Complainant)", the same having been similarly received by Complainant's counsel through the mails this day pursuant to a similar request made of Complainant the preceding week. And we ask that this blue print be marked Complainant's "Exhibit PP." This exhibit is offered for similar assistance in presenting and defining the issues of this case before the Court.



That is, for facilitating such presentation and definition. Counsel further states that all of the indorsements on Exhibits OO and PP, together with the signatures of the Complainant, appear to be in the handwriting of the Complainant with which counsel is well acquainted.

Mr. Westall:—The same objection is repeated.

Mr. Blakeslee:—Counsel for Complainant desires the record to show that the motions for discovery or for an order that the defendants submit to and assist in the examination of the alleged infringing plant in Inyo County, California, and that defendants submit contracts, specifications, drawings, blue prints, and other papers and things tending to further show or which might reasonably show the constructions, inter-relation and operation of the governor mechanisms which the witnesses for Complainant have testified to as being present in the said alleged infringing plants, in Inyo County, California, as to which motions notice was previously given upon the record, and notice of continuance given defendant from time to time, were withdrawn upon notice to the Clerk of the Court and to counsel for the defendant on the 13th day of February, 1914. The attention of the Court is, however, called to the fact that the demands noted upon the record and made of defendant for inspection and submission of and with respect to things concerned in said



motion, still stand upon the record, such demands having been repeated after being first made as the record will show; and we further wish the record to show that no compliance in any respect has been made with such demands. We submit that these demands were reasonable and proper and more particularly so in view of the early dealings in these matters between Complainant's counsel and the City Attorney and prior counsel for the defendant. It is believed that had these demands been complied with the already ample record on the *prima facie* case might have been abbreviated and the Court might have been assisted in expeditiously and clearly grasping the more or less complex questions of structure entered into in the *prima facie* case as made out.

Mr. Westall:—Counsel for the defendant calls attention to the fact that the most of the record herein was made before any of the times set for the hearing of the motion referred to, and that the testimony as to the infringement had been taken long before there had been any opportunity for a hearing of said motion. Counsel for the defendant also disclaims any opposition to such motion if it had been kept within bounds, which would have required the production of evidence which would have been pertinent to any issue in this case.

Mr. Blakeslee:—The record shows the demands and requests upon which the motions



Page Line

were based were made early in the course of making Complainant's prima facie case, and the defendant had full opportunity to submit such papers and other things as it thought fairly responsive to such demands. The prima facie case speaks for itself and we are prepared to close the same after the further examination of the witness Scattergood, who we understand counsel for defendant states, is ready to reappear and who was to reappear this day.

As he has failed to do so, we will ask that an adjournment be noted until the hour of ten o'clock A. M. of February 17, 1914, and we will ask counsel for defendant to endeavor to have said witness Scattergood present at that hour to obviate the necessity of subpoenaing him.

(After the above request for postponement was made, the witness Scattergood appears.)"

at the time there was only one operating. There was a great deal of the time when there was not water enough in the creek to operate even one unit. The city's scheme in connection with the development of that creek is to provide reservoirs ultimately and install two additional plants, but the reservoirs had not yet been provided. And in the dry months of the year the water, a great deal of the time, runs below the amount required for the operation of one unit. The Division Creek No. 2 plant has been operating, I should judge, about two-thirds of

the time since it was installed. At the present time and for considerable time past—something like a year—there has been with some exceptions but one unit operating of the two plants. That is, of the total or three units. Part of the time a unit on the Cottonwood plant and part of the time a unit on the Division Creek No. 2 plant was operated. And the load has been but a fraction of full load for one unit most of the time. This condition has prevailed since the construction work on the aqueduct was practically completed. That is the best I can do from memory in regard to the operation of those plants. I have not followed it from day to day.

Q. 76. Am I to understand that since these plants were installed there has been from time to time an operation of each of the units of the Division Creek No. 2 plant and the Cottonwood plant up to the present time?

A. Yes. The three units have been kept in operating condition with the exception of very short intervals, and have been operating intermittently.

Q. 77. Now, please state a little more fully what was done with the electrical energy produced by these two plants under discussion. That is, what utilization was made of that energy during all the time since their installation.

A. Of course, there was no use made of it before their installation. The plants were installed for the furnishing of power for use in connection with the construction of the city's aqueduct and were installed of a permanent character with a view to their use

in conjunction with the city's complete aqueduct power project as planned, which involves four large plants along the line of the aqueduct, utilizing the waters in the aqueduct, and some additional plants on certain natural streams in the Owens River watershed. The great bulk of the energy which has been supplied in these plants has been used for that purpose. There has been a small amount of energy for the past two or three years used in rendering service to inhabitants of the lower end of the Owens Valley, practically at cost, and at times below cost, and at times somewhat above cost, depending on the amount of energy being used from time to time in response to their petitions and for their accommodation.

Q. 78. When you refer to "the city" and "the aqueduct," please state, for the purposes of the record, a little more fully what you mean.

A. The city of Los Angeles and the aqueduct that brings the water supply from the Owens River Valley to the city of Los Angeles.

Q. 79. Do you know what disposition was made of any rates collected for the supply of electrical energy from these plants to the residents of the Owens Valley? That is, what was done with the funds collected from such residents for such energy?

Mr. Westall: Objected to as incompetent, irrelevant and immaterial.

A. My recollection is that during the period of aqueduct construction funds were kept account of by the aqueduct accounting department, both as to

cost and receipts, and I don't think they were distinguished from the regular aqueduct funds, but of that I am not certain. More recently the aqueduct was in the hands of the Public Service Commission, which Commission has charge of the operation, maintenance and extension of these water works and supply and the rendering of that service is in the hands of that Commission. I have nothing whatever to do with it personally other than to advise in regard to electrical matters from an engineering standpoint from time to time as formerly.

Q. 80. By Mr. Blakeslee: Captain Hance, the treasurer of the city of Los Angeles, has testified that as yet no funds have come into the city treasurer's hands for the sale of electrical energy generated by these plants. Can you explain how that might be accounted for?

Mr. Westall: Same objection.

A. No further than I have already just now testified.

Q. 81. By Mr. Blakeslee: Will you kindly state some of the purposes for which the electrical energy generated by these plants was used in the development of the Los Angeles aqueduct?

Mr. Westall: The same objection.

A. The city constructed a 30,000 volt power line extending all the way from the intake in the Owens Valley north of Independence to a point just a few miles northeast from Mojave along the aqueduct, and from that point on to the city's cement plant located between Mojave and Tehachapi. The electri-

cal energy was used for the operation of motors, hoists, electric locomotives, electric shovels, in connection with the work of excavating and the work of lining the aqueduct with concrete, and in connection with the lighting of the camp and the works. A considerable portion of it was used to supplement the steam plant at the cement plant in the operation of the city's cement plant.

Q. 82. By Mr. Blakeslee: You have previously identified Complainant's Exhibit O. Can you state whether the dredge shown herein was operated by electrical energy from either of these plants in the development of the Los Angeles aqueduct?

A. It was operated from the 30,000-volt power line that I have referred to, which was supplied with energy from the Division Creek No. 1 and No. 2 plants and the Cottonwood plant, and steam plant at the cement mill referred to. At times the steam plant at the cement mill supplied energy for work along the line when the power of the three plants was insufficient.

Q. 83. And this dredge was used in making the excavation which formed part of the Los Angeles aqueduct?

A. It was used in connection with the portion of the excavations referred to by me a few minutes ago. Yes, sir.

Q. 84. In referring to the city of Los Angeles do you mean the city of Los Angeles, California, with whose departments you are connected?

A. Yes, sir.

Mr. Blakeslee: That is all.

Mr. Westall: Cross-examination is waived.

Mr. Blakeslee: Counsel for Complainant announces that the Complainant's prima facie case is now closed.

The Examiner here states on the record that Exhibit W was brought by him as Special Examiner from the session for taking testimony on behalf of Complainant in San Francisco. And that upon delivering same to counsel for Complainant I find that in such transportation a break has occurred in one of the white metal parts on the exhibit. I certify that originally the two parts thus severed were one continuous unbroken part of rigid metal, and that the same was inadvertently broken in transportation from San Francisco to Los Angeles. The little fragments produced by the breaking I have placed in the cup of the dashpot.

insert > MICHAEL KVAPISHEVSKI, being called as a witness on behalf of Defendant, being first duly sworn, testified as follows:

DIRECT EXAMINATION

By Mr. Westall:

Q. 1. State your name, age, residence and occupation.

A. Michael Kvapishevski; age, thirty; residence, 557 South Fremont Avenue; passenger agent of San Pedro, Los Angeles and Salt Lake Railroad.

Q. 2. Are you acquainted with the French

538 18 insert "IN THE UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF CALIFORNIA, SOUTHERN DIVISION.

GEO. J. HENRY, JR.,
Complainant,

vs.

CITY OF LOS ANGELES,
Defendant.

No. 87-A In Equity.

Testimony taken on behalf of Defendant in

the above entitled cause, pursuant to stipulation and order of the court heretofore entered, before I. Benjamin, Special Examiner in Chancery, at 311-313 International Bank Building, at 10 o'clock A. M. on April 1, 1914, pursuant to notice heretofore given.

Present:

Raymond Ives Blakeslee, Esq., Solicitor for Complainant.

Joseph F. Westall, Esq., Solicitor for Defendant."

language sufficiently well to be able to translate a French patent involving a water-wheel governing apparatus?

Mr. Blakeslee: Objected to as irrelevant, incompetent and immaterial, no foundation laid, not the proper method of qualifying the witness as an expert, if that is the object of the inquiry.

A. Yes.

Q. 3. By Mr. Westall: Will you please look at the patent I now hand you and state whether or not you understand the language in which that patent is written.

Mr. Blakeslee: The same objection, and that it involves a conclusion, namely, that the paper handed the witness is a patent.

A. Yes.

Q. 4. By Mr. Westall: Have you examined that document with a view of furnishing a translation thereof?

Mr. Blakeslee: The same objection.

A. To furnish an exact translation.

Q. 5. By Mr. Westall: Will you please look at the paper I now hand you and state what it is.

Mr. Blakeslee: The same objection: that it is not the proper method of proof, no foundation laid, and the witness is not qualified.

A. That is an exact translation of the French patent and a description of the French patent.

Q. 6. By Mr. Westall: Who made that translation?

Mr. Blakeslee: The same objection.

A. I did.

Q. 7. By Mr. Westall: What mechanical experience or training have you had which would tend to give you the command of language and understanding of mechanical devices, sufficiently to enable you to properly translate from the French language to the English language a patent involving a water-wheel governor?

Mr. Blakeslee: The same objection, and that it is leading and not the proper method of establishing the qualifications of the witness.

A. I had four years education in the University of Dresden, Saxony, and my French is acquired from my home education as a child.

Q. 8. By Mr. Westall: Did you ever reside in France?

A. Oh, yes.

Q. 9. How long did you live there?

A. I was in Paris about ten times spending a couple of weeks, and in Belgium in Lieges and Brussels.

Q. 10. Is the paper which you have identified as a translation a true translation of the French patent?

Mr. Blakeslee: Objected to as not the best evidence and not the proper method of proving a translation.

A. It is an exact translation.

Mr. Westall: Counsel for Defendant offers in evidence the French patent No. 291588, granted August 8, 1899, to Escher, Wyss & Company, and ask

that the same be received in evidence and marked "Defendant's Exhibit French Patent" for identification.

Mr. Westall: Counsel for the Defendant offers in evidence the document identified by the witness as a true translation of the French patent just above referred to, and ask that it be received in evidence and marked for identification "Defendant's Exhibit Translation of French Patent."

Mr. Blakeslee: As to the attempted offer of these Exhibits or purported Exhibits, Compainant's counsel objects, respectively, as follows:

As to the attempted offer of the alleged copy of French patent, the objection is made that the copy is not identified, bearing no certification such as is required by the statute, as to its genuineness, particularly in that no certification appears by any consular officer or other persons recognized under the revised statutes as eligible and competent and legally qualified to certify to and identify any such copy of a foreign patent or other publication purporting to have been made outside of the United States of America.

Second: There is no certification whatsoever to the genuineness or correctness of this purported copy of the French patent, in the English language, and cognizable by the Federal Courts of this country or any other court.

Third: There is not a physical attachment or connection of the several parts of this purported copy of the patent which would bring all the parts

thereof under any alleged certificate or purported means of identification.

Fourth: The objection is made to the introduction of this Exhibit that there has been no foundation laid for its introduction; that this purported copy is not the best evidence and no foundation has been laid whatsoever for the introduction of secondary evidence, and, therefore, and for those reasons, this purported copy is irrelevant, incompetent and immaterial.

Fifth: The objection is made that there is no certificate accompanying and relating to this purported copy of the French patent which in any way establishes any of the purported data or disclosures thereof, including dates, names, numbers and sources of grant or issuance of the patent of which this purports to be a copy, the paper and what appears to be a tracing accompanying it and the red ribbon and other physical annexations being not entitled to recognition as evidence or any evidence by this court as anything but an incompetent aggregation of its several unidentified parts.

Upon the above the Complainant objects to the offer of this alleged copy as an exhibit and to its consideration in any manner whatsoever in this case.

As to the purported translation of the purported contents of this purported French patent, we object on the ground that such purported translation has not been proved and that the witness has not qualified to prove it, and that it is irrelevant, incompetent and immaterial, and cannot be considered in this

case either with or independently of the purported copy of the purported French patent, being Defendant's Exhibit French Patent, and we object to its consideration in any manner in this case upon these same grounds.

(The said Exhibits are thereupon respectively marked "Defendant's Exhibit French Patent," together with the title of the court and cause and the date of the offer of said Exhibit, and

("Defendant's Exhibit Translation of French Patent", together with the title of the court and cause and the date of the offer of said Exhibit.)

Q. 11. By Mr. Westall: Will you please look at the document I now hand you and state, if you know, what it is.

A. I looked it over and translated it, but I cannot give you an answer—

Q. 12. I mean, what kind of a paper is it?

A. It is a Swiss patent for a mechanism for the regulation of a by-pass.

Mr. Blakeslee: We object to this on the ground that the witness is not qualified to answer the question, and we ask that that portion of his answer relating to the subject matter or purported subject matter of this paper be stricken out as not responsive to the question.

Q. 13. By Mr. Westall: Do you understand the language in which the document which I have just handed you is written?

Mr. Blakeslee: Objected to as leading.

A. Yes, sir.

Q. 14. By Mr. Westall: What language is it?

A. It is written in German, which language I understand thoroughly.

Q. 15. Have you examined that document with a view of furnishing a translation thereof?

A. Yes, sir.

Q. 16. Will you please look at the paper I now hand you and state what that is.

A. That is a translation of the Swiss patent.

Q. 17. Of the Swiss patent just referred to?

Mr. Blakeslee: We object to this question as leading.

A. Yes.

Q. 18. By Mr. Westall: State whether or not the translation just referred to in your last preceding answer is a true translation of the document you have before you.

Mr. Blakeslee: Objected to as irrelevant, immaterial, incompetent, no foundation laid, the witness not having qualified to answer the question, and as leading.

A. Yes.

Q. 19. By Mr. Westall: State whether or not you understand sufficiently the device described and shown in the Swiss patent which has been handed you, to furnish an accurate and complete translation from the German language into the English language.

Mr. Blakeslee: Objected to on the same grounds.

A. Yes; I had the German technical education which made it possible for me to understand the

German and Swiss patents thoroughly.

Mr. Westall: Counsel for Defendant offers in evidence the patent just referred to, being Patent No. 17536, granted on the 15th day of December, 1898, to Irene Schaad, and ask that the same be received in evidence and marked for identification "Defendant's Exhibit Swiss Patent".

Mr. Blakeslee: As to the offer of this paper as an Exhibit, we object upon each and every one of the grounds registered against the attempted offer of Defendant's Exhibit French Patent, with the exception of those parts of those objections which relate to the physical separateness of the purported drawing and the rest of the purported copy and to the pink ribbon which seems to have been omitted from this Exhibit. And we register the further objection that this purported copy of the Swiss patent is entirely irrelevant, incompetent and immaterial for the further reason that it does not come within the pleadings in this case, no reference to the same being made in the answer interposed by the Defendant in this case, no reliance, therefore, being placed upon the same by the Defendant in its defense or being capable of being placed upon the same. And we therefore finally object to its offer and identification in this case and to its consideration in any respect in determining the issues of this case.

As to these two purported attempted Exhibits, namely, French patent and Swiss patent, we further object to the implication in the requested details of these Exhibits that they are French and Swiss pat-

ents, respectively, or any patents at all, the very offer of the Defendant being coupled with a reference to these purported copies as such copies and not as patents. The original patents are not produced, and for the reasons stated, are not reflected or represented in any manner by these purported copies in accordance with the objections registered.

Mr. Westall: As to the objection that the Swiss patent offered in evidence has not been set up in the answer, counsel for Defendant calls attention to the fact that there is now pending a motion to amend the answer to correct an error in the number of the patent as set up in the original answer, and that but for the congested condition of the calendar of the court that motion would undoubtedly have been passed upon last Monday.

Mr. Blakeslee: Not only is there a variance as between the number of this purported copy of the Swiss patent and the number set up in the answer, with respect to a purported Swiss patent, but there is a variance as between the purported date of this purported copy of the Swiss patent and the purported date of the purported Swiss patent set up in the answer; and, furthermore, we are proceeding in this case under the answer on file and under which proceedings on behalf of Complainant were taken in this case, and which was filed in this case many months ago, and the pendency of any such motion cannot in any way affect the pleadings in this case; and the blanket objection is made at this time without the necessity of

repetition, as to every bit and scrap of purported evidence or testimony which may be attempted by counsel for the Defendant to be taken, produced or offered in these proceedings, which is at variance with the pleadings of the answer on file or which is not included therein unequivocally and definitely. The proposal to introduce evidence at this time not covered by the pleadings in the case, after diligent procedure by the Complainant based upon an answer filed before the Complainant made his prima facie case, is strenuously objected to and it is urged that any such motion to amend as may be pending in this case was not brought with diligence, and its approval by the court or any order approving the same will be strenuously opposed by counsel.

(The said Exhibit is thereupon marked "Defendant's Exhibit Swiss Patent", together with the title of the court and cause and the date of the offer of said Exhibit in evidence.)

Q. 20. By Mr. Westall: Referring again to the paper identified by you as a translation of the Swiss patent, will you please state whether or not that is a true, complete and accurate translation of the Swiss patent referred to?

Mr. Blakeslee: Objected to on the ground that the witness is not properly qualified.

A. Yes, sir.

Mr. Westall: Counsel for defendant offers in evidence the paper referred to by the witness as an accurate and correct translation of the Swiss patent, numbered 17536, dated December 15, 1898, and asks

that said translation be received in evidence and marked "Defendant's Exhibit Translation of Swiss Patent".

Mr. Blakeslee: The Complainant objects to the offer of this purported translation upon each and every one of the grounds of objections urged against the offer of Defendant's Exhibit "Translation of French Patent".

Mr. Westall: In view of some of the foregoing objections of counsel for Complainant, I wish to say that in setting this time before the final disposition of the pending motion to amend the answer, I have only acted with a view of expediting the cause and getting the evidence in within the time allowed by the court. Attention is called to the fact that the Complainant in this case has had to put in his prima facie case sixty-five days, and that a fair division of the time should permit Defendant to have the extension asked for. But, in view of the fact that the congested condition of the calendar will not allow the court for several weeks to pass upon the proposed amendment to the answer, as well as upon the motion for an extension of time, counsel for the defendant is using every reasonable effort without regard to strict technicalities for the expedition of the case, and notice is hereby given that when that motion is finally reached the court will be asked to enter any order nunc pro tunc as of March 30, 1914, at the time when the motion was originally made.

Mr. Blakeslee: We renew our notice to the Defendant that we shall contend that the present pro-

ceedings on behalf of the Defendant are, as they can only be considered, taken and had under and in accordance with the pleadings as they stand in this case to date, and that such pleadings determine what evidence may be adduced or attempted to be adduced by the Defendant in this case. The attention of the court is further called to the fact that Defendant has had forty-three days prior to this present time in which to proceed to take its proofs in this case, and that there has been no attempt or move made to take any such proofs prior to this time. As to the suggestion that there be a fair division of time for taking the proofs in this case, attention is called to the fact that the Defendant's time to take proofs prior to rebuttal proceedings runs to and including the 2nd day of May next, one month and one day from date, giving the Defendant a total time to take proofs of seventy-five days, as the matter now stands, as against the Complainant's time of sixty-five days referred to. And, as this case is set for final hearing for the 26th day of May next, Complainant will have remaining to him but twenty-four days within which to take his rebuttal proofs, a less time than that provided for in the stipulation extant in this case. It is contended that all the diligence and all the consideration attached to Complainant's actions in this case, and that Defendant has had and now has an over-abundance of time in this case, and to bring any such motion as that referred to, had there been diligence in such procedure.

Mr. Westall: You may cross-examine, Mr. Blakeslee:

Mr. Blakeslee: Cross-examination is waived.

EDWARD S. COBB, being called as a witness on behalf of Defendant, being first duly sworn, testifies as follows:

DIRECT EXAMINATION

By Mr. Westall:

Q. 1. State your name, age, residence and occupation.

A. Edward S. Cobb, fifty-six years old, I reside in Whittier, California, and I do business as a consulting engineer at 1121 Central Building, Los Angeles.

Q. 2. What education, experience and training have you had which would tend to qualify you to testify as an expert in a patent case involving a water-wheel governor?

Mr. Blakeslee: Objected to as leading and calling for a conclusion, and not the proper method of establishing qualification.

A. I was educated in the Worcester Polytechnic Institute at Worcester, Massachusetts, from 1875 to 1879, in a course of mechanical engineering; followed railroading one year; opened an office in Boston in 1880 for the designing of machinery; in 1882 I was appointed Professor of Practical Mechanics and machine design at the Rose Polytechnic Institute at Terre Haut, Indiana; in 1888 I went to Dallas, Texas, practicing general engineering in Texas and Okla-

homa until 1892; in 1892 I worked one year as chief engineer of steam engine manufacture in Erie, Pennsylvania; in 1893 and 1894 I was chief salesman engineer of the Risdon Iron Works of San Francisco. From 1894 to 1896 had an office of my own in San Francisco, California, designing mining machinery, water power plants, and making tests and measurements connected with such lines of business. From 1896 to 1900 I was senior member of the firm of Cobb and Hesselmeyer, mechanical and hydraulic engineers, in San Francisco, doing business with some of the largest installations and in some of the original installations in hydraulic work installed in the State of California. From 1900 to 1901 I was consulting engineer at Los Angeles, California, doing a general consulting business in mechanical and hydraulic subjects.

Q. 3. By Mr. Westall: Have you ever testified as an expert in patent causes?

A. In a great many of them, in Massachusetts, in Texas and California.

Q. 4. I now call your attention to Complainant's Exhibit HH purporting to be a certified copy of the Lyndon Patent, No. 695220, and ask you to state if you have examined said patent and if you understand the device therein shown and described?

A. I have read the patent through and endeavored to familiarize myself with the details of construction, and feel that I understand the objects and aims to be accomplished by the mechanism therein shown. I am not an expert in electrical matters and have to

assume that statements made with reference thereto in the patent are correct. The general desire of and object covered by this patent, I understand.

Q. 5. Please describe the device you find forming the subject matter of the specifications, and illustrated in the drawings of said Lyndon Patent No. 695220, freeing the subject as far as possible from technical terms. Explain the theory, as you understand it, upon which the Lyndon patent was working, the objects aimed at, the results sought to be accomplished, stating fully your reasons for any opinions you may express.

A. From reading the text of the Lyndon patent one learns that the object of this device was to so control the gates of a water-wheel and so control a by-pass for water leading from the main penstock, that regardless of the quantity of water being used to perform useful work in the water-wheel at any instant, a constant flow of water should be maintained in the penstock, and the idea being of such mechanism to overcome a difficulty which had been recognized in practice at that time, caused by the flow of water in the penstock acting somewhat as follows when the quantity was increased or decreased that was supplied to the wheels: If a water-wheel is operating under a given normal condition and the load it was required to drive or handle was very suddenly increased or decreased, then the mechanism has been arranged to close or open the gate supplying water to the water-wheels in order that they might

have sufficient energy imparted to them to overcome the increased load, or sufficient energy taken from them to balance the decrease of load. Under such circumstances as this, and having in mind the stored energy of the flowing water in the penstock, when a gate was closed at the water-wheel the action on the water was to momentarily increase the velocity of the water discharging through said gates, if they were partially closed. Vice versa, if the controlling mechanism of the water-wheel were opened with the intention of bringing more water to act upon the wheel, the pressure of that water would be momentarily decreased because of the inertia of the flowing water in the penstock. The object of the device shown in this patent is to overcome that difficulty, which was a recognized difficulty in the controlling of water-wheels to maintain uniform speed under all conditions of load, without too great a variation of speed when those loads were changed. The patent in question shows a penstock for bringing water to a water-wheel; it shows a by-pass, the discharge from which may be partially controlled, and it shows mechanism for operating the gates to the water-wheel, the mechanism for operating the gates of the water-wheel and for operating the discharge opening of the by-pass being operated coincidentally and by a change of speed in the load driven by the water-wheel. Provision has been made in the device shown for overcoming any tendency of the water-wheel to continue to increase in speed beyond the point desired when water is supplied to it, and also provision

for overcoming its tendency to decrease in speed beyond a point desired when water is cut off from the wheel. The language of the patent covers this statement of the case, and Claims 6 and 7 indicate to my mind the strong points of the device. From my knowledge of the state of the art at about the time that this patent was issued, I know for a certainty the objects aimed at by this application were also the objects aimed at by many engineers working along on these lines. That is to say, the demand for devices of this kind was recognized and was the subject of studied efforts and experiments in order to obtain proper action in water-wheels to correspond with the demands for electrical generators which received their initial energy from water-wheel operation.

Q. 6. Has your experience been such as to familiarize you with the state of the water-wheel-governing art prior to September 13, 1900, the date of the Lyndon application?

Mr. Blakeslee: Objected to as calling for a conclusion on the part of the witness and not calling for a statement of what experience the witness has had, if any.

A. It has.

Q. 7. By Mr. Westall: Will you state specifically what experience you had had with water-wheel governors prior to the 13th of September, 1900, which would qualify you to speak authoritatively as to the state of the art at that period.

Mr. Blakeslee: We object to the question as lead-

ing and calling for a conclusion and not calling for a full statement of what the experience of the witness was.

A. When I was acting as engineer for the Risdon Iron Works, as before stated, from 1893 to 1894, I came in contact with a number of water-wheel installations used for hoisting at mines and for driving pumps, and became acquainted with the condition of the art at that time as exemplified by the practice of the Risdon Iron Works in the installation of water-wheels, of the Pelton Water Wheel Company of San Francisco, and of a wheel known as the Dodds water-wheel, also manufactured in San Francisco; and after I opened an office of my own in 1894, through clients who came to my office for assistance in engineering matters, I became very steadily employed in the designing and installation of such classes of works. One installation in particular, which applies, perhaps, as well as any to this case, was at The North Star Mines in Grass Valley some time about the year 1897, I think. The problem there was to drive a certain water-wheel at a constant speed regardless of the amount of work being done by the waterwheel and regardless of the fluctuations in pressure occurring in the penstock supplying water to this water-wheel. The peculiarities of the location were such that the same penstock, some seven miles long that supplied water to this water-wheel installation, also supplied water to several other water-wheel installations, some of them used for operating mine hoists, and wherein the power was many

times during the day suddenly shut off and on. The result at the lower end of the penstock, where the installation in question was being installed, was a very material variation in pressure, these variations occurring oftentimes suddenly and at all periods during the day and during the operation of the wheel. To overcome the difficulties that were presented, I designed a special nozzle for supplying water to the water-wheel and a special governor for operating the nozzle and a special device upon the pipe line for regulating, so far as possible, the pressures within that pipe line or penstock near the location of the water-wheel. So far as my knowledge of the practice in the mountains was at that time the adjustable nozzle that I applied to that water-wheel was recognized as the first successful one in operation. The governor that was designed to control this nozzle, if you will pardon me for saying it, was of such design that the builders required the purchaser to pay for it before it was shipped, because no faith was put in the fact that such a governor could be constructed. This governor was intended to maintain the wheel at constant speed regardless of the load on the wheel, and it operated to do that in a most acceptable manner and did it by controlling the area of cross-section of the nozzle supplying water to the wheel. The fluctuations of pressure in the pipe line due to causes hereinbefore mentioned was regulated within approximately three pounds of pressure out of 335 pounds normal pressure, by a specially arranged air-chamber having discharge openings con-

trolled by safety valves, the whole being so arranged that any increase of pressure above that which was considered as normal pressure occurring in the penstock would be absorbed by the air-chamber, and any rebounding action of the air-chamber prevented from operating to fluctuate the pressure in the penstock, and the surplus water thus entrapped in the air-chamber was discharged through the regulating valves previously mentioned. That whole installation worked in a satisfactory manner.

The next opportunity that was presented to me for the study of problems similar to the one involved, was the installation of water-wheels for the Power Development Company at the foot of the Kern River Canyon, about fifteen miles northeast of the city of Bakersfield. This installation was started in 1896 and was subjected to tests for acceptance in 1897. The object of this installation was to supply water-power for operating electrical generators; and, as these generators were to supply both power and light to the city of Bakersfield, it was considered necessary that they have very close regulation for speed. Several corporations presented schemes for accomplishing the results that the Power Development Company required, but after consideration they concluded to adopt the scheme presented by the Girard Water Wheel Company, so-called, of San Francisco, who were, so far as I know, at that time just starting in business. They presented a power unit for operating the generators consisting of two so-called Girard Water-wheels to which the water

was supplied by a number of nozzles, each having an adjustable orifice for discharging water into the wheel body. In the particular unit under discussion there were two such wheels on a single driving shaft. This driving shaft was not connected directly to the driving shaft of the electric generator, but was connected to the driving shaft of the electric generators through a system of links, the object of which was to use the constrained motion of these links as a means for operating the nozzles and controlling the quantity of water supplied to the wheels in proportion to the load of the generator, and also to so control the supply of water to the wheels that the speed of the generator should be constant or as nearly so as was practically possible. And, on account of the large body of water involved in the operation of these wheels, because of the fact that they had a comparatively low head, it was deemed advisable to introduce a by-pass in the penstock for the purpose of discharging from the penstock such water as was not used upon the wheels.

Q. 8. By Mr. Westall: Now, during the time that you were employed in and about these various installations which you have described, state whether or not you made any special study of water-wheel governors which were then in use.

A. Yes. I was acquainted at that time with the water-wheel generators in use in California. The common method, where the water supply was ample, was to use what was called a deflecting nozzle. That is to say, the nozzle supplying the water to the wheel

could be swung about a center so that the stream from the nozzle would impinge to a greater or less extent upon the buckets of a tangential water-wheel. That was a very common method of handling the load throughout the mining country. It was not found very accurate for handling electrical loads, for getting real good uniform speed. Then the Pelton Water Wheel Company introduced the idea of having several nozzles play upon the buckets of a tangential water-wheel, and sometimes they provided on one of these nozzles, and frequently on all of them, a sort of a sliding hood that would pass over the ends of the nozzles to determine the quantity of water discharged. They also devised another form of deflector for the water discharged from the nozzle which acted to deflect the water from acting on the wheel after it had left the nozzle, which was otherwise fully wide open. This device acted correctly in that it did not, by reason of changing the quantity of water striking the wheel, change the flow in the penstock. The device was controlled by a governor composed of two elements, one of which was a constant speed motor or as near a constant speed motor as could be driven from the water supply. This little constant speed motor was provided with an exceedingly heavy fly-wheel in proportion to the quantity of water supplied to its water-wheel; and then there was connected to the water-wheel shaft a special governor of the well-known fly-ball type which, acting through differential gearing in connection with the constant speed motor, gave a means of operating the water-wheel gates and which

was at that time a very satisfactory proposition. But in the case of the proposition that I mentioned as being installed in Grass Valley, the wheel then was to drive an air compressor, and it was essential that this air compressor would operate in such a manner as to maintain at all times a constant pressure of air in a certain air receiver from which the air was taken to operate the machinery of a large mine, including pumps, hoisting engines and the like, being a very intermittent demand for compressed air. It was also essential that the wheel should use just as little water as possible in doing the work. Consequently, the compressor was so designed that it would only compress the exact quantity of air required to maintain the pressure in the above mentioned receiver, while the main shaft was driven at all times at a uniform rate of revolution. Then for constructing a given compressor to fill those conditions, we had the fly-ball governor to take care of any variation of speed which might occur in the shaft of the compressor, and we had an auxiliary cylinder operating in this case, the piston of which was moved by any variation of air pressure in the air receiver. This cylinder, and this piston, operating by the air pressure in the air receiver, was similar in its results or similar in its action upon the remaining portions of the governor in many respects to the constant speed motor that I have previously mentioned as being common in some of the Pelton water-wheel installations. But it was necessary, at all events, in the Grass Valley installation, that two

things should operate on the governor: one, any change in speed; another, any change in the pressure of air maintained in the receiver. Also about this period S. N. Knight of Knight & Company, Sutter Creek, California, was doing pioneer work in water-wheel installation, and he devised governors for controlling the supply of water to wheels dependent for their action upon the change of speed, which in turn, operated the gates of the water-wheels. His field of activity was more in connection with mining work and I don't recall at this time any installation that he put in in those years for the operation of electric-lighting plants. I think some years later he took up the question of lighting plants, but not at this time. My business was such that I was running around all over the country and I saw, probably, as much of what was going on in those days as anybody in the business in this state. The subject of water-wheel regulation at that time was a live subject, and it was anticipated that in years to come it was going to cut a great swath in the production of electricity, and the electrical engineers made a very great strong point of the fact that they must have uniform speeds under all conditions.

Q. 9. About what time are you speaking of now?

A. The years from 1893 to the time I left there in 1900, all the time.

Q. 10. Was there any particular locality in the United States that was further advanced, to your

knowledge, in water-wheel-governing means than any other part, or, I might say, where the subject was given greater attention?

Mr. Blakeslee: Objected to as leading and calling for a conclusion.

A. From my knowledge of the state of the art during the years mentioned, the subject, as I have before stated, was a live one in California; and, owing to the fact that the heads of water and the pressures of water to be dealt with, and the small quantities in proportion to be dealt with, it made the subject of water regulation almost belonging, under those conditions, to this State. The eastern part of the United States had not, to my knowledge, at that time developed any what we call high heads. There were lots of heads of water in evidence where I was raised, 20 to 30 foot heads, and a 40-foot head was very rare; and the type of wheels we used were large wheels using large quantities of water under low heads, and they were used prior to the time of the introduction of electric-lighting, and strictly for driving industrial plants, and their regulation was sufficient at that time for that purpose. But the handling of water under high heads introduced many other peculiar conditions, and, especially, where the water was brought to the wheel in long conduits or long penstocks, as they are sometimes called—but long pipe-lines is the real name. In the New England practice the water to the turbine wheels was taken from canals through penstocks of large diameter for handling large quantities of wa-

ter at low velocity, as a general rule, whereas in California the conditions were such that we had comparatively small quantities of water under extremely high heads. This introduced a terrific spouting velocity and made the problems governing the speed of water-wheels entirely different, practically, from those which had been found to prevail from the use of low heads for turbine water-wheels. Consequently, I fully believe that it is a fact that California, as a country, and the Swiss people, were the ones most alive to the question of governing water-wheels under high heads of water. The Swiss, I knew in those years, were working on the problem, and I saw at those times and along in the year 1898, I think, several articles in the technical journals which had been translated, I presume, from the Swiss articles, and they were credited to this Escher-Wyss Corporation whose name I heard this morning in connection with one of the patents. I recognize that as being the name of one of the progressive corporations of Switzerland interested in the same problems that we were studying in California in those years. Since I left San Francisco in 1900 to take up my residence in Los Angeles, I have not had anything like the contact with these hydraulic questions that I had prior to that time, and at this time am not so well acquainted with the latest devices used. But at the dates I mentioned above, from 1893 to 1900, I was in the business and alive to its requirements, and, if I do say it myself, did some pioneer work in obtaining results.

Q. 11. By Mr. Westall: State whether or not at that time you kept in touch with the development of the art through magazines and periodicals and other methods of communication?

Mr. Blakeslee: Objected to as leading, and suggestive and calling for a conclusion.

A. I did not. My work was almost all on the side of being actually on the job. I did not study the magazines at all, and it was only special articles that I ever saw, once in a while. I know no condition of affairs except as they were brought to me specially.

Q. 12. By Mr. Westall: How would the installations which you have mentioned in your previous testimony compare in size and importance with other installations at that time in California, if you know?

Mr. Blakeslee: Objected to as calling for a conclusion.

A. The installation at Bakersfield was for 3,000 horse power. Two installations at Grass Valley, the first one, I think, was for something like 250 horse power and the last for 335 horse power. The exact powers of those can be obtained. And about those dates the original plants were being put in east of Fresno. I did the mathematical work for the construction of the penstock on that line and I don't remember what the output of power was, but the head of water under consideration was over a thousand feet. The head of water on the Grass Valley plant was 775 feet and the head of water on the Bakersfield plant was above 200 feet—200 or 220, or some-

thing like that—and down the Mother Lode country there were heads of water in the Blue Lake plant in the Mokelumne River of 250 feet. I had to do with the plants at the Canada Mine near Jackson, and also the Keystone Mine at Amador, but the heads and powers I do not remember particularly. At that time I knew who was using every cubic foot of water that ran through the Blue Lakes water system, and if it is essential to this case I could produce the figures. But I do not recall them now. But they were most all used on water-wheels, except such little supply of water as was necessary for domestic use for the towns of Amador, Sutter Creek, Jackson, and so forth, on Mokelumne Hill.

Q. 13. By Mr. Westall: I now call your attention to a sentence beginning at line 8, page 1 of the specifications of the Lyndon patent, No. 695220, reading: "The governors at present employed to regulate the water supply to the water-wheel in general simply operate to open and close the water-gate, thereby allowing the admission of a greater or less supply of water", and ask you to state whether or not that is a true statement of the development of water-wheel governing art at the time of the Lyndon application on September 13, 1900?

Mr. Blakeslee: Objected to as calling for a conclusion.

A. There was in use prior to this date water-wheel governors which operated not only to open and close the water-gate, but also to regulate the flow of water in the penstock at all times, regardless

of the quantity of water flowing through the gate.

Mr. Blakeslee: We object to this answer and ask that it be stricken from the record as not responsive to the question.

Q. 14. By Mr. Westall: I will ask the witness to amplify the answer, explaining fully the devices which, in his opinion, would make the statement read inaccurate, if I have correctly understood the answer.

Mr. Blakeslee: Objected to as leading and suggestive, and calling for a conclusion and not for a statement of such facts as the witness may know pertinent to the conditions at the time inquired of.

A. Prior to the date of the patent of which the quotation has just been made, there was in use in California a power plant wherein the governor was employed to regulate the water supply to the water-wheel and also to regulate the supply of water discharged from the penstock, the operation of both of which maintained a constant or steady flow of water in the penstock. Such an installation, to my personal knowledge, was in operation prior to August, 1897.

(At this point an adjournment is taken until 2 o'clock P. M. of this day at the same place.)

Wednesday, April 1, 1914, 2 o'clock P. M.

This being the time and place to which the taking of proofs on behalf of defendant was continued, proceedings are now resumed.

Present:

Raymond Ives Blakeslee, Esq., solicitor for
Complainant.

Joseph F. Westall, Esq., solicitor for Defendant.

EDWARD S. COBB, recalled.

DIRECT EXAMINATION (Resumed)

By Mr. Westall:

Q. 15. I now call your attention to line 88, page 4, of the Lyndon patent in suit, reading: "It is here to be noted that all water-wheel governors as made today must accomplish their governing only at such speed as the acceleration or retardation of the water in the column of the pipe can be accomplished, whereas in the action of the governor herein described with the compensation gate and actuating apparatus, the time element is removed from the main gate and the water-wheel and taken care of in the by-pass", and ask you to state whether or not such language is a correct and accurate statement of the development of the art at the time of the Lyndon application, September 13, 1900?

Mr. Blakeslee: Objected to as calling for a conclusion on the part of the witness.

A. It is not a correct statement, because prior to that time there had been water-wheels constructed wherein the governor and compensating gate and actuating device and gates of the wheels had been in use, together with a by-pass in the conduit leading to the wheel.

Q. 16. By Mr. Westall. From your knowledge of the history of the art prior to the Lyndon application, I will ask you to state what, if anything, in

your opinion, was added to the art by the Lyndon patent in suit?

Mr. Blakeslee: Objected to as last stated of record.

A. Nothing.

Q. By Mr. Westall: Is there anything new with Lyndon in providing, as stated by him in line 28, page 1, of the specifications, of the Lyndon patent in suit, "a by-pass inserted into the penstock or flume at a point near the water-gate, and a gate in the said by-pass controlled by the same governing mechanism that controls the water-gate, and operating to allow a greater or less flow through the by-pass according as the water-gate is being closed or opened."

Mr. Blakeslee: The same objection.

A. No; there is nothing new in that statement. There was nothing new in that statement at the time and date that it was made.

Q. 18. By Mr. Westall: When and where did you ever see or hear of the use of a by-pass provided with a valve to maintain a uniform pressure in the pipe-line and prevent water-ram prior to the date of the Lyndon application?

Mr. Blakeslee: Objected to as leading and as assuming a fact not testified to by the witness.

A. I saw the drawings for such a device prior to, I believe, September, 1896. I reported on the probable results of the use of such a device sometime during the summer of 1896, the date of which can be supplied, and saw water-wheels operating with such a device in use successfully many times prior to Au-

gust, 1897, at the power plant of the Power Development Company approximately fifteen miles east of Bakersfield, California.

Q. 19. By Mr. Westall: Prior to the date of the Lyndon application, September 13, 1900, have you seen any apparatus embodying a governor construction combined with a water-gate and by-pass, wherein the by-pass and water-gate under the control of the governor operated inversely each with respect to the other?

Mr. Blakeslee: Objected to as leading.

A. Yes, sir.

By Mr. Westall: Counsel for defendant calls attention that he is simply quoting a question asked by Complainant of the witness Henry in leading up to the alleged infringement, and that if the question is leading now it must have been leading when asked of the witness Henry.

Mr. Blakeslee: We will supplement the objection by the further objection that no foundation has been laid for the question.

Q. 20. By Mr. Westall: Please state when and where you saw such an apparatus as described in the last question.

A. I saw such an apparatus prior to August, 1897, in operation in the power house of the Power Development Company, fifteen miles east of Bakersfield, California.

Q. 21. What was the Power Development Company? A corporation?

A. The Power Development Company, as I now

think, was a corporation formed under the laws of the State of California, for generating electric currents by the use of water from the Kern River to supply power and lights to Bakersfield and vicinity.

Q. 22. And who were the principal officers, if you know, during the time that you speak of?

A. As I remember it, Charles Webb Howard, of San Francisco, was President, and Lloyd Tevis was a heavy stockholder. Carroll N. Beal was secretary and manager.

Q. 23. In what manner did you gain the knowledge that you have testified to as to the construction and operation of water-wheel governors in use in that plant?

A. I was the original hydraulic engineer of the Power Development Company.

Q. 24. For how long a period?

A. Off and on, whenever any questions arose in my line, from the time they started their work until I moved to Los Angeles in 1900. I think I went there on one trip since then. I am not sure of that. That is a matter that I can look up, if necessary. But, anyway, from the time they started and conceived the idea, which must have been somewhere about the latter part of 1895.

Q. 25. What part, if any, did you take in the designing and installation and construction of the plant which you have spoken of as being used by the Power Development Company at Bakersfield, at the time you have mentioned,—1896 and 1897.

Mr. Blakeslee: Objected to as leading and assuming facts not testified to by the witness.

A. My first work with that, as I now remember it, was to determine in connection with the civil engineer employed by them as to the best location for the pipe line leading from the intake from the flume down the mountain side to the power house. Also, to determine the diameter of that pipe and its thickness, material and method of construction. A draughtsman under Mr. Beal, the manager, and directly under him, drew up tentative plans for a power house and its contents, with a view to having a proposition submitted to them by different water-wheel manufacturers and machinery supply houses, for equipping the power plant according to these tentative plans. In answer to his request that they submit propositions for water-wheels, etc., he received a proposition from the Risdon Iron Works for the installation of a power unit, and from the Pelton Water Wheel Company, and from the Girard Water Wheel Company, and those tenders on their part were made some time in the summer of 1896, I believe. That date I can fix, but right at this moment it is out of my mind. In behalf of the Power Development Company I went over the different propositions made by these corporations, and recommended that the Power Development Company take up with the proposition of the Girard Water Wheel Company, which they did after my report, and my report was written to them in the summer of 1896.

I can fix that date in two minutes by referring to my notebooks.

Q. 26. By Mr. Westall: Will you please refer to your notebook, if you have one, and verify the date which you have mentioned.

A. The report that I made to them, above referred to, is dated August 8, 1896.

Q. 27. You have referred to a draughtsman.

A. The draughtsman I have referred to as being employed by Mr. Beal to draw up tentative plans was simply a draughtsman who drew up the general plan for the power house and general lay-out of the pipe line and general plans and sketches, as would be required by parties desiring to make a bid for complete installation on their own plans. His plan was simply illustrative of the position, but the plans of the contractors were finally to be used in the installation.

Q. 28. Have you the original or a copy of the report that you made at the time mentioned?

A. I have the office copy of the report that I made August 8, 1896.

Q. 29. Could you produce that office copy?

A. I wish to say, Mr. Westall, that these reports, if they are used here, I should like to make proper arrangements for in advance that they be returned, as they are part of my stock in trade and I don't want to leave them tied up in the archives of the court indefinitely.

Mr. Westall: I think some kind of an arrangement can be made to permit you to withdraw them.

(The witness produces a document marked "Report on Wheels of the Power Development Company, San Francisco, California, C. N. Beal, Secretary, August 8, 1896," having the signature "Edward S. Cobb" indorsed on the back.)

Mr. Westall: I will not introduce that just yet.

Mr. Blakeslee: It is noted that although this report is said to be produced, it is not offered in evidence and not submitted to the inspection of counsel for the Complainant.

Q. 30. By Mr. Westall: Will you please state briefly your reasons for recommending the selection of the Girard governor, which you have mentioned, by the Power Development Company?

A. As I recall at this time those reasons, without having read any of the report I made at that time on the subject, they were first considering the fact that they had comparatively a low head of water for tangential wheel operations. I believe that the Girard type of wheel was better adapted to that use. The Girard wheel, as constructed at that time, consisted of an annulus of buckets which revolved around the outside of the nozzles supplying water thereto, and the water was discharged from the periphery of the annulus containing the buckets.

The Girard people, moreover, submitted a scheme for regulating the speed which appealed to me as being theoretically the most perfect scheme that I had seen at that time for the regulation of water-wheels. It embodied the weighing of the load on the electric generator between the generator itself

and the shaft of the water-wheels supplying power thereto, and it was evident to me that any change of load was a quicker indication, or, if it could be used to operate water-wheel gates, would be a quicker and more sensitive means for operating the gate than if we had to wait a length of time for speed to change. The Girard people submitted a governor which in one construction contained a great many desirable elements. In the first place, it weighed the load being carried by the water-wheel, and it assumed a position in proportion to that load,—a fixed position for every different load. At the same time, it acted as the finest speed regulator that I had at that date seen on a water-wheel, and it contained within its methods of construction and operation all the requirements to prevent over-run of the wheel. The construction was simple and did not contain small parts liable to get readily out of order, so far as the governing and gate-controlling mechanism was concerned. For that and probably many other reasons I recommended that they take the Girard wheel.

Q. 31. Did you embody those reasons, or any of them, in the report which you have heretofore mentioned as having been made at that time?

A. In the report that I made at that time I discussed all the propositions that were made to the Power Development Company by the different bidders and gave my reasons for their discarding or setting aside the suggestions of each one of them, and also reasons for recommending the Girard

wheel, all of which is in the report that I have recently passed to you.

Q. 32. Please describe, in a general way, without going too deeply in the technicalities of the subject, the principle and method of operation of that Girard governor.

Mr. Blakeslee: Our general objection previously noted as to the testimony by this witness or any other witness, or as to any evidence to be adduced or attempted to be adduced in connection with any such testimony bearing upon this alleged Girard device or any other device prior to the date of the application for the Lyndon patent in suit, save and except with respect to the matters and things set up in the answer or which may have been set up in the answer or are purported to have been set up in the answer in the suit are concerned, is hereby repeated, and the attention of the court is called to the fact that this witness is testifying as to things entirely without the pleadings, and, therefore, irrelevant, incompetent and immaterial. The further objection is made that the testimony of the present witness is not the best evidence as to the purported devices or statements which are now under consideration by him; and we shall move to strike from the record and withhold from consideration in this case any and all testimony and evidence bearing upon such irrelevant, incompetent and immaterial statements and subjects, and such things and subjects as fall without the pleadings in this case.

Mr. Westall: Counsel for Defendant simply sug-

gests that the objection of counsel brings out very clearly an inconsistent position taken in the case. Counsel on one hand is insisting upon having testimony taken within the time allowed by the court, and, on the other hand, is interposing objections which, if regarded, would make it necessary to postpone the taking of any testimony until after the court had passed upon the motion to amend in this case. It is an absolute impossibility to have an order entered upon the motion to amend, in view of the congested condition of the calendar at the present time. And attention is also called to the fact that counsel for Complainant himself suggested that the motion be continued for two weeks, last Monday, when it came up for hearing. Now, either counsel for Complainant has no real desire to expedite the case or he is seeking to make it impossible for the Defendant to put in the evidence as required by the stipulation.

Mr. Blakeslee: I think that the court will read through the charge of inconsistency made against counsel for Complainant, the lack of diligence chargeable to the Defendant in presenting his said motion for leave to amend the answer. It is now over six weeks since Complainant closed an elaborate and expensive *prima facie* case, and the said motion was not introduced on a date earlier than the 30th day of March, namely, two days ago. When this motion was continued two days ago, it is true that counsel requested it to go over two weeks, as another matter which counsel who represents the Complainant was engaged in was continued over for

one week, and which is an urgent matter and takes precedence, in his opinion, as to importance over the matter of the motion referred to, but in view of the tardy procedure in presenting that motion, it is now some four months since the answer was interposed in this present suit, and counsel for the Complainant is willing to leave to the court without further comment the determination whether counsel for Complainant is unfairly charging the Defendant with lack of diligence in respect to this present motion, and whether he is not entirely within his rights in insisting that the proofs on behalf of the Defendant in this case be confined within the limits of the present pleadings.

A. The Girard governor consisted of a reasonably heavy fly-wheel with a heavy rim provided for the purpose of aiding the rotating energy of the electric generator, which fly-wheel was attached to the shaft of the electrical generator. Within the outlines of the fly-wheel—in fact, within the rim of the fly-wheel—there were attached two levers to pins diametrically opposite one another, these levers in operation remaining practically parallel to one another in all positions and lying as long chords across the fly-wheel. Attached to these levers were short links, free to swing about pins passing through the levers. These short links at their other extremities engaged with pins which were respectively in each end of a double crank-arm. This double crank-arm was keyed solid on the water-wheel shaft, and the water-wheel shaft was concentric and in line

with the electric generator shaft, and centered practically perfect with the center of the fly-wheel before mentioned. These levers were further connected by means of two heavy steel coil springs which were adjustable in regard to their tension and also adjustable, within limits, in regard to their position on the levers, particularly in reference to their distance from the pins on which these levers were hung. Also on these levers there were provided weights that could be moved back and forth on that end of the lever farthest from the point of attachment to the wheel. The dimensions and design were such that the total motion of the extreme ends of these levers was a few inches only—I think about 4 inches. When the springs referred to were adjusted for a certain initial tension, just sufficient to prevent centrifugal force from throwing the levers out when the wheel and generator were running at full speed, and no load, that was considered a normal position for the springs. But the springs had been designed for such dimensions both with respect to diameter of wire used and pitch and diameter of coil, that by previous tests it was known what tension they would exert between the levers referred to. When those levers were separated to some extent, or in other words, when the spring was extended to the various distances, that is to say, if the spring in its normal position with no load was of a certain length and had in its coils at that time a tension of, say 300 pounds, we knew from an exact test on the springs that if they were increased in length, say

4 inches, that the tension would increase to, say, a thousand pounds. Now then, if power be applied to the power wheel it would first act to revolve the double-ended crank-arm mentioned, and through the short links mentioned would act to close the levers mentioned down to their nearest position possible for them to take to the center of the wheel. And as motion was imparted to this device, the centrifugal force acting against the levers, due to their weight and to any added weight previously mentioned which might have been added, would tend to throw the levers outward away from the center of the wheel. If the generator attached to these levers by means of the fly-wheel above ^{specified} ~~mentioned~~ offered resistance to the revolutions, it had a tendency also to prevent the outward throw of the levers just mentioned due to centrifugal force. The whole construction in this way acted as a transmission dynamometer, and by proper calibration it could be shown that the position of the lever in the wheel would be a measure of the power being transmitted from the water-wheel shaft to a generator shaft, all the necessary calibrations of the springs and levers having been previously properly made. The fact that this mechanism did measure the load in that manner was one of the superior elements entering into its governing device. Whenever the water-wheel shaft was transmitting a given amount of power within the limits of the wheel, these levers assumed a definite position with reference to the wheel within which they were enclosed. That primarily

was due to its action as a dynamometer or as a measure of the load being transmitted. And when the dynamometer action was correct, the lever at that time was in perfect balance in the wheel. That is to say, there was just as much tendency for the lever to jump towards the center of the wheel, due to any other force than load acting upon it, as there was for it to pump outward toward the circumference of the wheel. Now then, if any other force than simply power transmitted was introduced, then this lever would change its positions. And the other force that we have in mind is the additional centrifugal force which would be brought to bear in the lever with an increase of speed, or the additional centrifugal force which would be brought into the lever by the decrease of speed in conjunction with the spring above mentioned. Consequently, the levers first, by their position, were a means of determining the load carried or, to make it more clear, for a given position there was a given load passing through them. And, for any such given position, they were floating. That is to say, balance with respect to the force of transmitted power passing through them. But any increase of speed of revolution or decrease of speed of revolution would cause them to instantaneously change position by reason of the increase or decrease in the centrifugal force acting therein. Consequently, in that way they became speed governors and were capable of regulating the speed with which the parts revolved, to the greatest nicety, which at that period was expected

in water-wheels. These levers also had connected to them by means of suitable links bell-crank levers, which, in turn, would move toward and from the hub of the double crank-arm a collar on the wheel shaft. This collar revolved at all times with the water-wheel shaft, but was free to move longitudinally thereon. Surrounding this collar and embodied in a circular groove therein, was another collar which did not revolve but fitted freely within its groove on the collar which was free to move longitudinally. Attached to this latter collar was a forked lever pivoted at a point below the shaft to a support on the water-wheel case, and the lower end of the lever was connected to a rod which passed through under the water-wheel and engaged one arm of the bell-crank. The other arm of the bell-crank was attached to a floating bar whose opposite end was attached by means of suitable linkage to the piston of a hydraulic cylinder. Between the two mentioned extremities of this floating lever there was attached in a proper manner the stem of a balance line to the line-slide thereof, the purpose of which was to allow the introduction of water or oil under pressure into before-mentioned hydraulic cylinder for the purpose of causing its piston to move in one direction or the other according to the position taken by the above-mentioned balance line to the line-valve. The piston rod of this hydraulic cylinder was perforated at its outer end with a cross-head guide, and on the upper side of the cross-head was connected to a lever which rotated about the center of the water-wheel

shaft. Forward of this connection it was connected by means of a rod to the crank-arm of a cylindrical by-pass valve which was introduced into the branch from the penstock between the main body thereof and the gates supplying water to the water-wheels. The lever above-mentioned as having motion about the shaft of the water-wheel, was so formed about that shaft as to represent a long cylinder, to one extremity of which was attached by means of suitable links the several stems of the water-wheel gates for one of the unit water-wheels, and at the other end of the cylinder similar connections to the other unit water-wheels, the result being this: that any change of position of the collar that could move longitudinally on the water-wheel shaft first gave a new position to the balance line to the line-valve above mentioned. This new position of the line to the line-valve would allow water or oil under pressure to enter at one side of the piston enclosed in the hydraulic cylinder, and any liquid in the opposite side of the piston to escape. The motion of the piston thus started would be transferred first to the opposite end of the floating bar or lever above mentioned and would tend to draw the balance line to the line-valve back to a position that it had just been moved from. At the same time, the forward motion of this piston would move all the gates attached to the water-wheel and also the by-pass from the penstock to the tail-race. The governor thus, I believe, has been shown by this description to have control absolutely, which I know it did in practice,

of the position of the gates of the water-wheel and the position of the gate in the by-pass automatically and quickly and effectively.

Q. 33. By Mr. Westall: In actual practice did that device fulfill your ideas of its effectiveness?

Mr. Blakeslee: Objected to as calling for a conclusions and not for testimony as to what it actually did.

A. The device was, as I have previously stated, considered by myself and the owners about as perfect a water-wheel governor as was then known, and the installation, so far as the governing of the water-wheel was concerned, was a perfectly satisfactory installation.

Q. 34. By Mr. Westall: Referring now to the report heretofore produced by you, endorsed "Report on Water Wheels for the Power Development Company, San Francisco, California, C. N. Beal, Secretary, August 8, 1896", I will ask you to state whether or not that report was sent to the Power Development Company at or about the date it bears—August 7, 1896?

Mr. Blakeslee: Objected to as irrelevant, immaterial incompetent and not tending to prove any issue properly raised by the pleadings in this case. And it is understood that the objections heretofore noted with respect to any and all matters not within the pleadings in the case, such as this alleged Girard governor, are registered with reference to each and every question which has been and which may be hereafter put with respect to any such unpleaded

matters and matters not raised in and by the answer, without the necessity of in each and every question specifically interposing such objection; and the same motion heretofore made to strike from the record and withhold from consideration all such matters as without the pleadings, likewise is understood to be repeated with respect to each and every part of the testimony of this and every other witness to which it applies.

Q. 35. By Mr. Westall: Whose signature is that appended to this report?

A. That is the signature of Cobb & Hesselmeyer by myself.

Mr. Blakeslee: Objected to as not the proper method of proof.

Mr. Westall: Counsel for the defendant offers in evidence the report referred to and ask that it be received in evidence and marked as "Defendant's Exhibit Cobb & Hesselmeyer Report of August 8, 1896."

Mr. Blakeslee: The offer of this paper is objected to on the ground it is irrelevant, immaterial, incompetent, and not tending to prove any issue raised by the pleadings in this case, and as not properly proven, and that it is not the best evidence of the matters concerned therein.

(The said Report so offered in evidence is marked "Defendant's Exhibit Cobb & Hesselmeyer Report of August 8, 1896", together with the title of the court and cause and the date of the offer of the said report in evidence.)

Q. 36. By Mr. Westall: Can you produce any pic-

tures or photographs of the plants that you have described in your previous answer?

Mr. Blakeslee: The same objection.

A. Yes, sir.

Q. 37. By Mr. Westall: Will you produce that photograph?

A. I have in my hand here a photograph showing the general interior view of the plant of the Power Development Company previously referred to.

Q. 38. Where did you get that photograph?

A. It was given to me by the owners of the plant at the time I was finishing up the installation.

Q. 39. At what date?

A. It must have been about 1897, because I have never been in the plant since.

Q. 40. Were you present at the time the picture was taken?

A. I was not.

Q. 41. Do you recognize in the representation there a correct picture of the Power Development Company plant that you have testified about?

Mr. Blakeslee: Objected to as calling for a conclusion and that it is not the proper method of proof and not the best evidence and not the proper method of identification of the photograph.

A. Yes.

Q. 42. By Mr. Westall: Do you recognize either of the persons represented in said photograph?

A. There are four persons shown in the photograph here. One in front of the switchboard whose name escapes me just at this moment, but which I can supply

if necessary. Another one sitting on the corner of the electric generator is Wirt Macmurdo, the civil engineer, employed on the general lay-out. Sitting on the corner of the water-wheel base is Mr. Berry, the designer of the mechanism. Lying on the floor is John Smalley who was the foreman of the Lacy Manufacturing Company in the installation of the penstock work up to the main operating gate. The photograph shows the interior of the power house after two of the main units had been installed, and shows the foundation bolts which at that time stood in the floor in anticipation of the addition of further units.

Q. 43. Can you state at about what time that photograph was taken?

A. That photograph must have been taken, by reason of the presence of the three men in it, especially Smalley, just immediately after the installation was ready to start.

Q. 44. And about what date?

A. It must have been prior to—it may have been several months prior, but it was certainly prior to August, 1897, to my certain knowledge.

Q. 45. What means have you for determining the date?

A. Because under a date of August, 1897, I made a report on the operation of this plant after it had been subjected to some tests and the original of that report was submitted to the Power Development Company.

Q. 46. That is not the report you have heretofore referred to?

A. No. That report was made before anything was

purchased to put in the plant. It was a year prior to this time.

Q. 47. You have pointed out Mr. Berry. Is that Mr. S. L. Berry?

Mr. Blakeslee: Objected to as leading.

A. I don't remember his initials. I always knew him as simply "Berry". I would not attempt to remember his initials. I would know him if I saw him mighty quick.

Q. 48. By Mr. Westall: What part did Mr. Berry take in designing and installing the device?

Mr. Blakeslee: Objected to as leading.

A. He was the chief designer of the Girard Water Wheel Company.

Q. 49. By Mr. Westall: As chief designer what were his duties?

A. He made the drawings from which the wheels, housings, governors, gates and governing mechanisms were constructed.

Q. 50. I will now ask you to explain the operation of the devices shown in the photograph and point out the parts which you have previously mentioned in your general description, marking or lettering the different parts of the apparatus there shown, for identification, and to aid in better understanding your description.

Mr. Blakeslee: The same objection as previously noted.

A. "A" on the figure is the electrical generator. "B" is the fly-wheel enclosing the governor. "C" is one of the water-wheel units. "D" is another of the water-wheel units. "E" is the hypdraulic cylinder operating the main inlet gate F in the penstock G. "H"

is the collar with the oil-cup shown above it, which slides longitudinally on the water-wheel shaft referred to in my testimony. "I" is the lever, one end of which is attached to the collar and which is fulcrumed to the pedestal supporting the water-wheel shaft, and the other end of which connects by means of a rod not shown to the mechanism, hidden on this photograph behind the water-wheel case "C." "J" is the by-pass valve interposed or connecting the penstock at a point between the main intake-gate and the water-wheel gate to the tail-race. "K" is the arm on the stem of the by-pass valve which, in turn, is connected to the connecting rod running to the hydraulic cylinder. "L" is an exciter used solely for the purpose of exciting the fields of the electric generator. Those are the essentials shown in the picture.

Mr. Westall: Counsel for the defendant offers in evidence the photograph just referred to and asks that it be received in evidence and marked "Defendant's Exhibit Interior of Power Development Company's power house."

Mr. Blakeslee: Objection is made to the photograph offered as an exhibit on the ground that it is not within the pleadings in this case and that it is irrelevant, immaterial and incompetent, not identified and not properly proven.

(The said photograph so offered in evidence is marked "Defendant's Exhibit Interior of Power Development Company Power House", together with the title of the court and cause and the date of the offering of said Exhibit.)

Q. 51. By Mr. Westall: Can you produce any other

photographs showing a different view of the device which you have just described?

A. I can.

Q. 52. Will you please produce them.

A. I have here three reproductions of photographs or cuts of the device under discussion. One of them shows a perspective view of the fly-wheel governor mentioned in the description. Another of them shows a view taken between the two water-wheel elements of a single unit, and shows the details of construction very completely of the water-wheel-gate-operating mechanism. The other is an outline view showing the elements of construction of the governor wheels.

Q. 53. From your recollection of the construction of the device as to which you have been testifying, do you recognize the photographs and diagram just referred to as correctly illustrating and disclosing the devices of the water-wheel governor and its appurtenances, in use by the Power Development Company in 1896 and 1897 as previously testified to by you?

Mr. Blakeslee: Objected to as leading, calling for a conclusion, not the proper method of identification and proof, no foundation laid for the description and production of these pictorial representations, and upon the further ground that these representations are not responsive to the question, being apparently not—at least in one instance—a photograph of any device or mechanism actually constructed, and as the subject of the photograph. Further, that it is irrelevant, immaterial and incompetent.

A. I do.

Q. 54. By Mr. Westall: Please point out and indicate by letter or otherwise the various parts which you have heretofore described from the photographs just produced.

Mr. Blakeslee: The same objection.

A. Referring to the photograph marked XX, I have marked the water-wheel cases with the letter C; the stems of the water-wheel gates with the letter T; the penstock with the letter G; the by-pass valve with the letter J; the crank-arm on the stem of the by-pass valve with the letter K; the connecting rod connecting the by-pass valve with its operating mechanism, with the letter U; P represents the hydraulic cylinder which is connected through the cross-head Q to the rocker-arm R and to the connecting rod U, so that any motion of the piston in the hydraulic cylinder P, is transmitted to and gives motion to the rocker-arm R, and the stem of the by-pass valve at K. S is a sleeve in encircling this water-wheel shaft and is attached rigidly to the arm R and at either end attached by proper linkage connections and bell-cranks to the ends of the stems of the water-wheel gates as at T T. M is a bell-crank, one end of which is shown to be attached to the floating lever N. The opposite end of the floating lever is attached to the piston rod between the hydraulic cylinder P and the cross-head Q. O is the valve stem operating the valve for determining the position of the piston in the hydraulic cylinder P and is itself operated by its connection as shown by the floating lever N.

On the photograph marked ZZ, B represents the wheel enclosing the governor; H represents the collar which

has longitudinal motion along the water-wheel shaft and carries with it a collar attached to the forked end of the rocker lever marked I.

Photograph marked M Z is a photograph of an outline or diagrammatic drawing of the main elements contained within the governor wheel B.

Mr. Westall: Counsel for the defendant offers in evidence the photograph marked XX by the witness and asks that it be received in evidence and marked "Defendant's Exhibit XX".

Mr. Westall: Counsel for the defendant offers in evidence the photograph marked by the witness ZZ and asks that the same be received in evidence and marked "Defendant's Exhibit ZZ."

Mr. Westall: Counsel for defendant offers in evidence the diagrammatic drawing marked by the witness as M Z and ask that it be received in evidence and marked "Defendant's Exhibit MZ."

Mr. Blakeslee: Each and single of these showings is objected to on the offer in evidence of the same upon the grounds stated as to the non-inclusion of the same in the pleadings in this case, and as irrelevant, immaterial and incompetent, and upon the further grounds of insufficient and improper method of proof and identification, and as irrelevant, immaterial and incompetent.

{The said three exhibits so offered in evidence are marked respectively "Defendant's Exhibit XX", "Defendant's Exhibit ZZ", and "Defendant's Exhibit MZ", each together with the title of the court and cause and the date upon which it was offered in evidence.

Q. 55. By Mr. Westall: Is the Power Development Company now in existence?

A. So far as I know. Oh, yes; it is now operating.

Q. 56. Is the same corporation operating the same plants at Bakersfield?

A. I believe not. They are not operating the wheel shown in this photograph.

Q. 57. I will now ask you to compare the device shown and disclosed in Complainant's Exhibit HH, the Lyndon patent in suit, with the photographs which have been heretofore introduced, showing the water-wheel governor in use by the Power Development Company at Bakersfield.

Mr. Blakeslee: The same objection.

A. Referring to Figure 1 of the Lyndon patent, 2 represents the water-wheel case represented by the letter C in the photographs. And 1 in the Lyndon drawing it represents the penstock as shown by the letter G in the photographs. 47 in the Lyndon patent drawing shows the by-pass conduit containing the by-pass valve 48, which is shown by the letter J in the photographs. The remaining mechanism shown in the Lyndon patent is shown in the governor construction in the wheel B in the photographs in connection with the collars H, rocker-arm I, rod V, connecting same to the bell-crank M, floating lever N, valve stem O, hydraulic cylinder P, cross-head Q, rocker-arm R, crank-arm on by-pass valve stem K, connecting rod U of rocker-arm R, sleeve S with its connection to the stems T T of the water-gates of the wheels. Below the base which supports the water wheel cases C and the by-pass valve J is the tail-race or waste-

waterway for carrying away the water used in the wheel or that discharged by the by-pass valve, and is not shown in either of the above-mentioned photographs, being below the surface of the floor.

Mr. Blakeslee: Objection is made to the answer previously given and to the photographs taken in connection, that the showing on the photographs is only fragmentary and the comparison with the Lyndon patent in suit is made in connection with such fragmentary showing.

Q. 58. By Mr. Westall: I will ask you to state what, if anything, in your opinion is said or claimed to have been accomplished by Lyndon in the Lyndon patent in suit which has not been accomplished in the governing device which you have identified and described as being in use by the Power Development Company at Bakersfield in 1896 and 1897.

Mr. Blakeslee: Objected to on the same general grounds, and upon the further grounds that it calls for a conclusion. And, further, that the question apparently involves the interpretation of the Lyndon patent in suit in respect to the claims thereof as to which interpretation the witness has not qualified.

A. The Lyndon patent does not set out any results in the regulation of water-wheels that are to be desired which are not accomplished by the mechanism shown in the photographs and which were in use in the plant of the Power Development Company, and from my knowledge and experience with such devices it is my opinion that the mechanism constructed to conform to all the details of construction required for its operation as shown by

the Lyndon patent, would be practically inoperative, though theoretically correct,—as there are so many electrical contact points, so many friction clutches and so many small and intricate devices involved as to render the upkeep of such a device in practical operation prohibitive of its use.

Mr. Blakeslee: We ask that all that portion of the answer commencing with the words “and from my knowledge and experience” be stricken from the record and withheld from consideration as not responsive to the question and as a mere expression of an opinion and an arbitrary and sweeping conclusion on behalf of the witness.

Q. 59. By Mr. Westall: From your experience with water-wheel governors generally, as a practical hydraulic engineer, state whether or not a device constructed in accordance with the disclosures of the Lyndon patent would be a practical operative device such as could be used practically for the purposes for which it is evidently designed.

Mr. Blakeslee: Objected to as calling for a mere conclusion and not for any facts tending to prove the nature of operation of the device of the Lyndon patent in suit.

Q. 60. By Mr. Westall: I might add, in doing so, please explain fully your reasons for the opinions you may express.

A. The Lyndon patent does not show any superior regulating properties for water-wheels that have not been demonstrated by the mechanism used by the Power Development Company at Bakersfield prior to August,

1897. Nor does it show a device so simple in construction nor so easy of operation nor so easy to maintain in proper operating condition. With that view of construction set forth in the Lyndon patent, I would not advise anyone to construct the device there shown in anticipation of getting thereby a reliable and practical ~~Lyndon patent~~ ^{operating water-wheel governing} is a practical and operative device.

Mr. Blakeslee: We ask that the first portion of this answer be stricken out as not responsive, namely, all that portion which does not treat of the opinion of the witness as to the operativeness and practicability of the Lyndon device, and as to this we object to it as a mere expression of opinion and arbitrary conclusion of the witness.

Mr. Westall: The attention of counsel is called to the fact that the question specifically calls for a statement of opinion as well as the conclusions of the witness as to whether or not the device shown and described in the Lyndon patent is a practical and operative device.

Q. 61. By Mr. Westall: Please state briefly your reasons for considering the device illustrated in the Lyndon patent drawings as not practical.

A. My reasons for considering this device impractical in operation and hard to maintain in accurate service, are that it contains within its make-up too many friction clutches, which we all know ~~are~~ doubtful in action, too many electric pressure contacts, liable to easy derangement, and while it shows in its construction a theoretical solution of the problem, the practical carrying out of proper operation could not be accomplished with any reliable continuity of service.

Q. 62. From the date of the Lyndon application, September 13, 1900, to date, have you ever known of a single water wheel governing device constructed in accordance with the Lyndon specifications and drawings?

Mr. Blakeslee: Objected to as indefinite and calling for a conclusion on the part of the witness.

A. I have not.

April 2, 1914, A. M.

Mr. Blakeslee: Before proceeding further in this case, I wish to make a further statement with respect to the Defendant's Exhibits French Patent and Swiss Patent, prefacing such statement by a query to counsel for Defendant, namely, whether he contends or will contend that the said Exhibits mentioned are original letters patent issued in the respective countries and by the proper authorities of the respective countries, France and Switzerland.

Mr. Westall: The documents referred to introduced in evidence speak for themselves, and counsel for defendant does not at this time care to state what his contention regarding such documents is.

Mr. Blakeslee: Very well. Then, prior to taking further testimony as to these Exhibits as to which we are proceeding upon the assumption which we believe is supported by the papers, being the offered Exhibits themselves, and the inscriptions thereon, that the said Exhibits are copies; nevertheless, we will enter a further objection to their offer heretofore as Exhibits and their consideration as evidence in this case in any respect whatsoever, based upon the alternate assumption that

these Exhibits are original letters patent, namely, that there has been no proper foundation laid for the introduction of the same, that the same are not identified in any manner whatsoever, being manifestly, if of any value, nothing but alleged papers alleged to have been produced or written up or prepared in countries foreign to the United States and as to which cognizance cannot be taken by any court or department or branch of the Government of the United States, and that for these and other reasons such offered Exhibits are irrelevant, immaterial and incompetent, and not a class of evidence or any evidence which may be properly considered in this case. These further objections are registered without concession by the Complainant that these mentioned Exhibits are or may be original letters patent; but these further objections, or alternative objections, are registered because of the meager showing made by the Defendant in offering these Exhibits, and in view of the refusal by counsel for the Defendant to specify what it will be contended is the nature of these Exhibits with respect to their originality or mere purported duplication of originals.

Mr. Westall: Before proceeding further with the examination, and with a view possibly of shortening the subsequent examinations of both Defendant's witnesses and those of Complainant on rebuttal, I should like to ask counsel if, in view of the cross-examination of Complainant's witnesses on the prima facie ^{case} ~~fact~~, he desires to limit his charge of infringement to any particular claim or claims of the patent sued upon, or whether he still insists that each and every one of the claims are

infringed by the devices in use or alleged to be in use at the Division Creek and Cottonwood plants as testified to.

Mr. Blakeslee: Complainant refuses to limit the charge of infringement to any claim or claims or portions of the Lyndon patent in suit. In the first place, there is no necessity for doing this, from our viewpoint, and, in the second place, the suggestion of such limitation does not come at the proper time and is tardy in its presentation. Counsel must know that the proper method to produce such an election of claim or claims or portions of patent sued under which are to be relied on is to request such election at the commencement of taking the Complainant's proof or by a motion to specify. Furthermore, it must be manifest to counsel for Defendant that after his exhaustive cross-examination of several of the witnesses for Complainant, in which he laboriously and, we contend, with quite some success, educated testimony comparing most of the claims term for term ~~with~~ ^{which} structures with which the charge of infringement is concerned, going into the matter of equivalence, Complainant cannot be expected to consider any such election at this time. At the present moment we stand upon the entire patent in suit.

Mr. Westall: Counsel for the Defendant does not know the law as so confidently asserted by counsel for the Complainant, and denies that anybody else knows the law in that way. It is pointed out that there was absolutely no objection on the part of the Complainant to a long drawn-out cross-examination involving every claim of the patent in suit. It is also pointed out that

the complaint charges infringement of all the claims of the patent in suit, and that those were the issues as originally presented and upon which this case has so far been tried.

Mr. Blakeslee: We do not propose to attempt to teach counsel the law; but, among other decisions, in order that there may be something concrete in the discussion, we refer counsel to the ruling of the Judge of this same Court in the suit of *Laws*on vs. Remington, in which counsel for Complainant was also counsel for Complainant *Laws*on, and in which under the old rules a demurrer was interposed to the bill, one of the grounds of which was the failure to specify what portions of the *Laws*on patent were elected to be relied upon in the suit, and the Court, approximately two years ago, sustained the demurrer upon that one ground and ordered Complainant to amend and specify the claims relied upon, which was done.

Mr. Westall: Counsel is perfectly familiar with the law on the subject.

EDWARD S. COBB, recalled.

DIRECT EXAMINATION (resumed)

By Mr. Westall:

Q. 63. In your previous testimony you have given long descriptions of the device and mechanism in use in the Bakersfield installation, namely, that used by the Power Development Company in 1896 and 1897. Without referring to any particular drawings or documents,

I will now ask you to state whether or not those descriptions were based upon previous examination of drawings or documents or whether they were made from your memory of the device in use at that time??

A. The description that I gave yesterday offhand without reference to any photograph or drawing or letters or figures was a description of the machine and mechanism as I see it in my mind at this time, and as I am certain it was constructed at that time.

Q. 64. Please explain how it is that you happen to be able to give such a complete and thorough description of the device after this lapse of time?

A. There are a number of reasons. In the first place the subject matter was along a line that I was working very diligently on at that time. Another reason is that I do not pay attention to many branches of business, all my business being directed toward mechanical and hydraulic matters. Another reason is that the particular device under consideration at the time of its submission for acceptance by the Power Development Company embodied new and exceedingly interesting mechanism for properly governing the speed and power output of water-wheels. Under the conditions that this system of water-wheels and governing mechanism was submitted to the Power Development Company for acceptance, it was to fulfill certain guaranties with regard to the regulation of speed and its efficiency as regards quantity of water used in proportion to the power output. The guaranty of efficiency was higher than usually suggested by builders at that time, and the guarantee of speed regulation was closer than was customary at that time. Consequent-

ly, when the plant was finally installed and submitted by the contractors for test, the greatest care was taken to see that tests were accurately and thoroughly made. The various tests were made and it was discovered that the efficiency of the water-wheel fell far below the guarantee. It was contended on the part of the parties constructing the wheels that the fault lay in the efficiency of the measuring instrument of the electrical end of the installation, and tests were made to determine, independently of the electric output, what the power output of the water-wheels were under certain conditions and under the conditions that were prevailing at the time of the test, and the water-wheels were still found to be low in efficiency and not fulfilling the conditions of the original guaranty. The tests showed that the water-wheels exceeded, however, all the conditions of the guaranty with reference to regulation of speed, and in that respect, and in respect to the ease of operation and certainty of operation were entirely acceptable to the Power Development Company. But, by reason of their falling below the efficiency guaranty, and by reason of the fact that other makers of wheels were anxious to make installations, under the belief that they could exceed the efficiency shown by these Girard wheels under test, the Power Development Company at a later date than any heretofore mentioned conducted to discard the Girard wheels and allow other makers of wheels opportunities to install their special devices with a view of obtaining a greater efficiency in the amount of water used, they fully knowing at the time, however, and admitting that the question of the quantity of the water used was not material to the suc-

cess of the plant as a whole because the conditions of their water right for power purposes was such that all the water that was taken out of the river at the upper end of the intake had to be delivered into the river before or at the lower point of the tail race, whether it passed through their water-wheels or not. The conditions of water rights below the power house on the river were such that this condition had to prevail. However, the Power Development Company did at a date later than August, 1897, try other makes of wheels, that, so far as my knowledge goes, were inserted on the same water-wheel shaft and within the cases of the water-wheels that are shown in the photographs heretofore submitted. I was not present at the installation or test of any of the wheels induced after the date of my report heretofore mentioned, which report was dated August 7 and 8, 1897.

Q. 65. By Mr. Blakeslee: You don't mean the first report?

A. No.

Q. 66. Not the report in evidence?

A. No; not the report in evidence.

Q. 67. By Mr. Westall: Can you produce the report that you have just referred to?

A. I can.

Q. 68. Will you produce it?

A. I have here a report written by myself as senior member of the firm of Cobb & Hesselmeyer, entitled, "Report Efficiency Test of the Girard Water Wheel at the Power House of the Power Development Company. San Francisco, California, August 24, 1897."

Q. 69. Please look at the signature at the end of the report and state whose signature that is.

A. I wrote the signature there "Cobb & Hesselmeyer, Engineers".

Q. 70. Was that report made to the Power Development Company?

Mr. Blakeslee: Objected to as leading.

A. This is the office copy that I retained of the report made to the Power Development Company.

Q. 71. By Mr. Westall: I notice that in producing this report you have sealed certain pages marking them "Sheets enclosed herein have no bearing on the case of Henry vs. the City of Los Angeles", dating them March 27, 1914. What was your reason for sealing that part of the report?

A. I closed those pages off of my own volition, because I knew that they dealt with the efficiency of the water-wheels involved in this case and presumed that the question of efficiency of the wheels was not pertinent to the present discussion, and I considered that the matter therein was matter solely the property of the Power Development Company and myself.

Mr. Blakeslee: We wish to object here to counsel and witness conferring during the progress of this deposition. If counsel wishes an adjournment, he can have it.

Q. 72. By Mr. Westall: When you speak of efficiency of the water-wheel, do you mean the efficiency of the particular governing device that you have described and shown in the photographs?

Mr. Blakeslee: Objected to as leading and attempting to coach the witness.

A. Not at all with reference to the governing device. The efficiency of water-wheels, as understood in its technical sense, refers to the percentage of useful power given out by the wheels in proportion to the theoretical power of the water supplied to them, and it was the low percentage of efficiency shown by these wheels that caused their final removal by the Power Development Company.

Q. 73. By Mr. Westall: Did the result of the efficiency test in any way change your idea with reference to the efficiency of the governing device which you have described?

Mr. Blakeslee: Objected to as leading.

A. We never considered the word "efficiency" exactly in connection with governors. But the operation of this governor as installed by the Girard Water Wheel Company in the power plant of the Power Development Company was far superior to anything that we had found prior to that time. Its regulation of speed was superior to the anticipation of the builders, and the regulation of the speed of the wheels under varying and suddenly applied loads was satisfactory to the Power Development Company. And it is my belief that although they induced different wheels and different nozzles into this plant after the wheels and nozzles of the Girard Company had been removed, they still retained the governing mechanism that had been installed by the Girard Company to control the nozzles of the succeeding wheels. I have no personal knowledge from my own observation that that is a fact, but it was the scheme contemplated the last time I was there.

Mr. Blakeslee: In view of the admission of the witness that the alleged continued use of the Girard device in this alleged 1897 Power Company installation was continued after the removal of the wheels originally installed in this plant, we ask that all that last portion of the last preceding answer relating to such governing device be stricken from the record and withheld from consideration as mere hearsay.

Mr. Westall: In the first place, there is no such admission as has been stated by counsel. The witness stated his belief that a certain condition of affairs continued.

Mr. Blakeslee: We will let the good English of the witness speak for itself as to this.

Mr. Westall: Counsel for Defendant offers in evidence the report produced and testified to by the witness, namely, the report marked "Report Efficiency Test of the Girard Water Wheels at the Power House of the Power Development Company. San Francisco, California, August 24, 1897", and ask that those parts of the report which have been left unsealed be received in evidence and marked "Defendant's Exhibit Cobb Efficiency Report."

Mr. Blakeslee: We object to the offer and acceptance of this paper in evidence under the general grounds of objection heretofore registered, and on the further ground that the paper is not properly proven and is irrelevant, incompetent and immaterial, and that it is not offered in toto, but only in fragmentary form with the reservation under seal of certain parts which may be far more germane to the issue than any other part thereof, if at all. The further objection is made that this report

is not a publication prior to the date of the Lyndon invention and that it is not a publication at all.

Mr. Westall: In view of the objection of counsel the witness has consented to unseal the sealed portion, and the report as a whole is offered in its entirety.

(The said report so offered in evidence is marked "Defendant's Exhibit Cobb Efficiency Report", together with the title of the court and cause and the date when same was offered in evidence.)

A. I wish to say in reference to this that when I took this report from my files for the purpose of allowing its use by counsel, I had in mind that all that they wanted from this report was the description contained therein in reference to the general construction of the power plants; and knowing that most of the report was in reference to the efficiency of water-wheels, I ran the thing over very carelessly and quickly and found that the first two pages covered all the points that I thought the attorney wanted, and, consequently, I grabbed up all the other pages that did not contain my signature and sealed them up without reading them at this time, and, as a matter of fact, I have not myself read them since 1897. Now, in view of that being the reason for sealing them up, I will now unseal them so that if counsel for Complainant or Defendant care to examine them they can do so.

Q. 74. By Mr. Westall: Taking up Complainant's Exhibit HH, the Lyndon patent in suit, I will ask you to compare the Bakersfield construction about which you have been testifying at the Power Development Company in 1896 and 1897, with the device described in Claim

6 of the patent in suit, stating fully your reasons for any opinions you may express.

Mr. Blakeslee: We object to this question, in so far as the claim is ^{sidarnd} concerned, as a part of the grant evidenced by the issuance of the patent in suit, as being put to a witness who has not qualified to make any such comparison, and, in that respect, is irrelevant, immaterial and incompetent.

Q. 75. By Mr. Westall: I will ask you in answering this question to point out in the photograph which you have produced the parts referred to in the claim and which you consider to be equivalents of those mentioned in the claim.

A. Claim 6 reads as follows: "In a water-wheel governor, the combination with means for operating the water-gate in either direction, a by-pass for the water-wheel, and a valve controlling said by-pass, of means connected to the water-gate operating means and operating the by-pass valve inversely to the operation of the water-gate." Referring to the photograph in evidence marked XX, "Means for operating the water-gate in either direction" are shown by the hydraulic cylinder P, its cross-head Q, the rocker arm R, the cylindrical connection S with the linkages shown in the photograph, connecting the same to the stems of the water-gates, which said stems are marked TT. "A by-pass for the water-wheel" is shown in the same photograph at J. "A valve controlling said by-pass" is within the case upon which the letter J is marked, and is operated by a stem centrally located therein, which passes through the rocker-arm attached thereto and marked K. "Of means con-

nected to the water-gate-operating means'' is shown in the photograph referred to by the long connecting rod U connecting the above mentioned crank-arm K to an extension on the rocker-arm R, which, in turn, is connected to the cross-head Q of the hydraulic cylinder P. "Inversely to the operation of the water-gate" does not of itself appear on the photograph, but the operation was such that as the by-pass was opened the water-gates were closed, and vice versa.

Q. 76. I will now ask you to make a similar comparison as called for in the last question, of the device described with that attempted to be covered by Claim 7 of the Lyndon patent in suit.

Mr. Blakeslee: The same objection.

A. Claim 7 reads as follows: "In a water-wheel governor, the combination with means for operating the water-gate in either direction from normal position, a by-pass for the water-wheel, and a valve for such by-pass, of means connected to the water-gate-operating means and adapted to operate the by-pass valve from normal position in either direction, so as to control such valve inversely to the control of the water-gate, during the governing action of the water-gate, and means for returning the by-pass valve to normal position on completion of governing movement of the water-gate-operating means." "In a water-wheel governor, the combination with means for operating the water-gate in either direction from normal position," means for operating the water-gate in either direction from normal position is shown in the photograph XX, before referred to, by the hydraulic cylinder P, its piston rod and cross-head

Q and rocker-arm R, and cylindrical connection S, and the arms there shown connecting said cylinder S to the water-gate stems TT. "A by-pass for the water-wheel" is shown at J. "And a valve for such by-pass" is the name to the moving part inclosed within the case marked J. "Of means connected to the water-gate-operating means and adapted to operate the by-pass valve from normal position in either direction," the means consisted in the long connecting rod U extending from the cross-head Q of the hydraulic cylinder P, and connecting its outer end with the arm K attached to the by-pass valve at J, the construction, though, not shown clearly in the photograph, but operates to open the water-gate and close the by-pass valve simultaneously or to open the by-pass valve and close the water-gates simultaneously, and in such manner as to maintain steady or regular flow of water in the penstock, and entirely controlled, first, by the position assumed by the piston in the hydraulic cylinder P, which position is determined by the position taken by the several elements making up the governor construction contained within the wheel B, shown on photograph Exhibit ZZ, thus giving governing action to the water-gate. "Means for returning the by-pass valve to normal position on completion of governing movement of the water gate operating means". That phraseology as just quoted from Claim 7 is not clear to me as to its meaning, but it appears to me to mean that if a water-gate is in a position to supply a proper quantity of water to a wheel to overcome a given load at a given speed, and by reason of a momentary change of such load the speed increases or decreases and

the governor acts to return it to its proper speed, this returning to that proper speed would bring the parts in to what the claim calls a normal position, which to me must mean the normal position assumed by all the parts at any specified load, but at a fixed speed. If it does not mean that, it does not mean anything, in view of the construction. It must appear clear upon studying these devices wherein parts are given motion to operate water-wheel gates, and that the same parts are also used to regulate speed, two things must be true: First, that for any given load, and, consequently, any given position of water-wheel-gate opening and the governing mechanism must occupy a certain position; and, while occupying that position, which, bear in mind, will be different for every different load, it must be in a condition to move quickly in either direction due to any change of speed, without reference to the quantity of water passing through the water-wheel gates. Now then, I assume that the normal position referred to is that position of the governing mechanism and of the water-wheel gates which corresponds to a given load or any given load at a given speed, and under those conditions the gates will be in the same identical position that they will always be for that load and that speed, and the bypass will be in a position that it will always be for that load and that speed. Then, the whole system being in balance, any change of speed will be available to change the position of the governing parts and change the position of the water-wheel gates to bring the speed again to normal condition, and in doing this would bring the parts that have been moved back to normal position spe-

cified in the claim. The mechanism in the installation of the Power Development Company which accomplishes this result is, first, all the parts contained within the wheel B, together with the longitudinal sliding collar H, the forked rocking lever I, the connecting link V, the connecting rocking lever I through the bases of the water-wheels to the bell-crank M, the floating lever N, the valve stem and valve O, the hydraulic cylinder P, the rocker-arm R, the connecting rod U, the arm of by-pass valve K, the by-pass J, the cylindrical sleeve S and the link-ages connecting same to the stems T of the water-wheel gates. These parts will operate in such a way or in such a manner that if for any given load on the water-wheel the piston within the hydraulic cylinder P and, consequently, its cross-head Q, assume a definite position; and while they are occupying that position the levers or bars heretofore referred to as being inclosed in the governor wheel B, and which are shown diametrically on the photograph Exhibit MZ, assume a like definite position corresponding to the load, and when this position has been assumed, speed being normal and correct, the levers float in the air, so to speak, and having extremities free of contact with any part of the wheel B. They may be said, in this position, to be floating in balance, ready to move in either of the two directions which it is possible for them to move in. Any change of speed to either increase or decrease the number of revolutions, will immediately change the position of these levers, due to the change of centrifugal force which is at that time acting within them. That will cause a change in the position of all the parts connecting said levers to the hydraulic

cylinder and cause the piston therein to assume a new position to correct the change in speed and bring them back to normal conditions of operation. This, I believe, makes it clear that the mechanism shown operated as a speed governor at any position which it was compelled to assume by reason of being a governor controlled by the load passing from the water-wheel shaft to the electric generator in this particular case. It was in use a most satisfactory and reliable governing mechanism. That, I believe, covers the question concerning Claim 7.

Q. 77. By Mr. Westall: I now call your attention to a certified copy of letters patent No. 668801, granted February 26, 1901, to Newton Lamb for improvement in regulating devices for impact water-wheels, and ask you to state whether you have examined that patent and whether you understand the devices therein shown and described.

Mr. Blakeslee: This question is objected to on the ground that it is irrelevant, incompetent and immaterial, not being pleaded in the answer in this case properly as a publication prior to the date of the invention of the Lyndon patent in suit nor prior to the date of the application, namely, September 13, 1900, for the Lyndon patent in suit. The said Lamb patent is only set up in the answer in this case as a printed publication "Prior to the alleged or any invention or discovery thereof by the said Lyndon patent". Manifestly, the publication of the Lamb patent was not prior to the date of the application for the Lyndon patent in suit, as established in that connection. And we likewise contend that it was in no sense prior, and it must follow that it was in no sense prior

to the date of the invention of the Lyndon patent in suit. We therefore object to the consideration of this Lamb patent or the purported Lamb invention, in any respect whatsoever, as not within the pleadings in this case, and, therefore, irrelevant, immaterial and incompetent.

A. I have looked over the drawings and read over the description contained in this patent and understand the operation of the devices therein shown.

Q. 78. By Mr. Westall: Will you please describe in as untechnical language as possible the device therein shown and described and the principle of its operation, the results accomplished, and the manner in which those results are accomplished, stating fully any reasons for any opinions you may express.

Mr. Blakeslee: The same objections, and the objections last registered will be understood as repeated without the necessity of actual repetition to any questions put about this purported Lamb patent or any purported disclosure thereof.

Mr. Westall: Counsel for Defendant offers in evidence a certified copy of the patent referred to, namely, Patent No. 668801, granted February 26, 1901, to Newton Lamb, as before described, and ask that it be received in evidence and marked "Defendant's Exhibit Lamb Patent."

Mr. Blakeslee: We object to the offer and admission of this purported certified copy of the Lamb patent, for the reasons heretofore stated, namely, that any such purported patent does not come within the pleadings in this case, not being set up in the answer excepting erroneously as a publication prior to the Lyndon invention;

and it is therefore, irrelevant, incompetent and immaterial with respect to any of the issues in this case, and incapable of consideration for those reasons.

(The said certified copy so offered in evidence is marked "Defendant's Exhibit Lamb Patent", together with the title of the court and cause and the date upon which said Exhibit was offered in evidence.

April 2, 1914, P. M.

By Mr. Westall:

*Sh. Berry recalled
direct examination
resumed*

(The question asked the witness before adjournment, to-wit, Q. 78, is read by the Examiner.)

A. The device shown in the Lamb patent sets out a rotating element for a water wheel indicated by 2 in Figure 1 of the drawing, which may be supplied with water under pressure for causing the rotation through the water passage 6, 6 and 7, the general supply of water being provided by the circular penstock 4. Two nozzles or passages for the admission of water to this wheel are provided of special construction. One of these passages 7 direct the water upon the wheel in the same direction that the other passages 6, 6 and 6 direct it, and in a direction to cause revolution of the wheel in a proper manner to perform useful work. The nozzle 7 is provided with a gate 9 which determines the quantity of water passing to the nozzle 7 from penstock 4. There is also provided an additional nozzle 8 which discharges water against the wheel from the penstock 4 in an opposite direction to that supplied by the nozzle 7 from penstock 4, and this nozzle 8 is also provided with a regulating gate 9 which may determine the quantity of water

discharged through nozzle 8 against the rotation of wheel 2. As set forth in the patent, the object of providing these two special nozzles, one a driving nozzle and the other a retarding nozzle, was so that whatever amount of water was shut off from the driving nozzle would be discharged by the reverse or compensating nozzle 8 for the purpose of varying the speed of the wheel and the power given off by the wheel. The action of these two nozzles is such, as set forth in this patent, as to provide a means of preventing the fluctuation of pressure in the penstock due to changes of quantity of water required by the operating nozzles when the speed of the wheel is changed by increase or decrease in the number of revolutions. Assuming that a wheel constructed as set forth in the patent was operating under a given load, and assuming that the nozzles 6, 6 were all open and supplying water to the wheel, that the nozzle 7 was one-half open, supplying water to the wheel in the same direction and for the same purpose as the water passing through nozzles 6, and the nozzle 8 was also half open and discharging water against the wheel in an opposite direction from nozzle 7, and such water from nozzle 8 acting to retard the wheel in its proper direction of revolution, the arrangement set forth in the patent under discussion is such then that any change in speed of revolution caused by any outside forces will change the relative positions of the gates of nozzles 7 and 8 in such a way that if the speed of the wheel starts to increase, the supply of water to nozzle 7 will be decreased and the supply of water to nozzle 8 will be increased; and vice versa, if the external force acted to decrease the speed of the

wheel the governing mechanism operates in such manner as to increase the supply of water supplied by nozzle 7 and decrease the supply of water discharged by nozzle 8, giving in this respect a governing construction easy of operation, and operating without changing the velocity of flow of the main water supply in the penstock. The construction in this respect performs the same function as is performed by supplying a by-pass made more distinctly separate from the nozzle O, indicated in the patent in suit, because, as you will understand from the above description, any water cut off from the nozzle 7 by its gate 9 is supplied to the nozzle 8 by its gate 9 as above described. Consequently, although the quantity of water driving the wheel in the desired direction has been changed, the quantity of water flowing through the penstock has not, thus showing means of accomplishing the results desired to be obtained by the construction shown in the patent in suit.

Q. 79. By Mr. Westall: I will ask you now to compare the device shown and disclosed in the Lamb patent No. 668891, just referred to, with the device shown and described in the Lyndon patent in suit.

Mr. Blakeslee: The same objection.

A. Referring to Figure 1 in the Lyndon patent in suit and also Figure 1 in the Lamb patent No. 668801, in the Lyndon patent the penstock is represented by 1; in the Lamb patent by 4. The wheel-case is represented in the Lyndon patent by 2; in the Lamb patent partially by 4 but showing no side-sections, the water in this wheel construction being discharged centrally and the design showing no special construction to prevent its dropping

immediately away from the wheel. The water-wheel-driving shaft is 3 in the Lyndon patent and also 3 in the Lamb patent. The by-pass in the Lyndon patent is represented at 47 and the gate in the by-pass is represented at 48. In the Lyndon patent this gate 48 closes as the main operating gate, whose stem is shown at 21b, is operated. In the Lamb patent the gate 9 for nozzle 8 operates in conjunction with the gate 9 of nozzle 7 in the same manner. That is to say, that when the gates operated by 21b are open and the by-pass valve 48 is closed in the Lyndon patent, then in the Lamb patent as the gate 9 behind nozzle 7 is opened the gate 9 behind nozzle 8 is closed, the object of the motion given to these valves in both cases being to prevent a change in the velocity of flow of the water in the penstock due to a change in supply of water to the water wheels, for the purpose of speed regulation. I think that covers the ground.

Q. 80. By Mr. Westall: Referring to Claim 6 of the Lyndon patent in suit, I will ask you to compare the device described in said Claim 6 with Defendant's Exhibit Lamb Patent and the device therein disclosed, and point out any similarities or differences you may find in operation, result or effect, giving in full your reasons for any opinions you may express.

Mr. Blakeslee: The same objection, and the objection previously made is repeated, namely, that the witness has not qualified to discuss the subjects of any claim of the Lyndon patent in suit, as a part of the patent, considered as to its legal effect.

Mr. Westall: The question does not go to the legal

effect of the patent; and, as to the qualifications of the witness to answer the question, the record very abundantly speaks for itself.

Mr. Blakeslee: We make the further objection that, so far as the record so far has developed, it does not appear that the witness is conversant with the disclosures of the letters patent nor with the interpretation thereof.

Mr. Westall: I do not understand that the function of an expert is to interpret claims of a patent. That is a function for the court. The question does not ask the witness to perform any function left by the law to the court.

Mr. Blakeslee: Well, the witness has been asked to compare the subject of Claim 6 with something else. We will have to put the other objection that the question is necessarily based upon an interpretation of such claim in order that the witness may erect, for the purposes of his answer, a definite subject which can only be erected upon some sort of an interpretation of that claim.

A. Claim 6 reads: "In a water-wheel governor, the combination with means for operating the water-gate in either direction, a by-pass for the water-wheel, and a valve controlling such by-pass, of means connected to the water-gate-operating means and operating the by-pass valve inversely to the operation of the water-gate." In the Lamb patent under discussion, referring to Figure 4, the rod 25, bar 24, link 23, and lever 20 operate the water gate 9 of nozzle 7 in Figure 1. In Figure 4 of the Lamb patent, rod 25, bar 24, link 23 and rocker-arm 20 operate valve 9 supplying water to nozzle 8 as shown in Figure 1, thus showing a direct means for operating

the water gate in either direction, a by-pass for the water wheel and a valve controlling said by-pass. The same mechanism above indicated operates in such manner that when valve 9 of nozzle 7 is opened for an increased flow of water, valve 9 of nozzle 8 is correspondingly closed, and vice versa.

Q. 81. By Mr. Westall: I will now ask you to compare the device described in Claim 7 of the Lyndon patent in suit with that disclosed in Defendant's Exhibit Lamb Patent, stating in full your reasons for any conclusions you may express or any opinions that you may give.

Mr. Blakeslee: The same objection as last noted.

A. Claim 7 of the Lyndon patent reads as follows: "In a water-wheel governor, the combination with means for operating the water-gate in either direction from normal position, a by-pass for the water-wheel, and a valve for such by-pass, of means connected to the water-gate-operating means and adapted to operate the by-pass valve from normal position in either direction". The devices shown in the Lamb patent for accomplishing these results are, referring to Figure 1, the valve 9 supplying water to nozzle 7, the valve 9 supplying water to nozzle 8, the stems 12 for these valves and the connecting levers 18; and in Figure 4 the levers 20, links 23, bar 24 and rod 25, which rod is attached to a governor described as being operated by pulley 30 from main water-wheel shaft 3. And the construction is such in the Lamb patent as to control such valve 9 in by-pass 8 inversely to the control of the water-gate 9 of nozzle 7 during the governing action of the water-gate. "And means for returning the by-pass valve to normal position on com-

pletion of governing movement of water-gate-operating means". These valves 9 in the Lamb patent are returned to their normal position only by a change of speed in the governing mechanism. This patent does not disclose any device for returning them by any consideration of the load carried on the wheel, and the operation of the two valves 9, which determine the water supply to the nozzles 7 and 8, is controlled by the speed element of the governor. When the governor increases in speed the water supply to nozzle 7 is decreased, and the water supply to nozzle 8 is increased; and when the speed of the governor is decreased the water supply to nozzle 7 is increased and the water supply to nozzle 8 is decreased.

Q. 82. By Mr. Westall: Referring now to line 28, page 1, of the Lyndon specifications, reading: "I provide a by-pass inserted into the penstock or flume at a point near the water-gate and a gate in the said by-pass controlled by the same governing mechanism that controls the water-gate and operating to allow a greater or less flow through the by-pass, according as the water-gate is being closed or opened." I will ask you to consider that language in connection with the Defendant's Exhibit Lamb patent in suit, and state in what respect, if at all, such language is inapplicable to the device described and disclosed in the last named patent.

Mr. Blakeslee: The same objection.

A. The language in question describes the by-pass inserted in the penstock at a point near the water-gate, and a gate in said by-pass controlled by the same governing mechanism that controls the water-gate, and operating to allow a greater or less flow through the by-pass

according as the water-gate is being closed or opened, as shown in the Lamb patent, and as descriptive of that construction. The object of the construction outlined in the above quotation was to produce such an operation of the valves in the by-pass and at the water-gate as to maintain a uniform flow of water in the penstock in both cases, when the governors were operating to maintain uniform speed and wheels operating otherwise under normal condition in both cases.

Q. 83. By Mr. Westall: I now call your attention to Defendant's Exhibit Translation of French Patent and ask you to state whether you understand the device therein described and illustrated in the drawing attached to Defendant's Exhibit French Patent which I now hand you, and whether you have heretofore examined said patent with a view of testifying in this case and with a view of explaining the operation and effect of the device therein shown.

Mr. Blakeslee: This question is objected to in that it involves the Exhibit French Patent objected to as not identified and the other objections of record with reference to this Exhibit; and the objection is made as to the Exhibit Translation of French Patent, that it is not a proven translation, and is irrelevant, immaterial, incompetent, as to any issues in the case.

A. I have examined the Exhibit and understand its operation.

Q. 84. By Mr. Westall: Will you please explain and describe the device therein described and disclosed, freeing the subject as far as possible from technical language,

and state fully your opinions and the reasons therefor, as to the operation and effect of said device.

Mr. Blakeslee: The same objection.

A. Referring to the drawing accompanying the Exhibit, we find at the left hand end of the lever u an outline diagram of a fly-ball speed governor of a design here shown such that an increase in its number of revolutions would tend to raise the left hand end of the lever u, and a decrease in the number of revolutions would tend to lower the left hand end of the lever u. The lever u is fulcrumed by means of the link shown by the solid line to the lever w, which, in turn, is fulcrumed on a fixed support. The right hand end of the lever u is connected to the operating stem of a slide valve. Lever w, above referred to, has its right hand end connected to the piston rod extending upward from a piston s, which can move backward and forward or up and down in cylinder r. Below piston s the piston rod is extended as v and connects to arm x for operating the water-wheel gate, and from the text we learn that any downward motion of the piston s and its stems v closes the water-gate. At the upper end of the piston rod v there is attached the left hand end of rocker lever j, which is fulcrumed at a fixed point z, and whose right hand end is connected to piston stem p in regulator weight k. Below the regulating weight k is provided a tapered valve i which is made integral with weight k. Said valve i closes a passageway g formed in the center of piston e, which passageway extends clearly through the whole length of said piston, but is much larger in size at its lower end where it comes in contact with the "compressed water". a

represents a connection to the penstock and c is a by-pass discharge from said penstock. b which is connected to piston e and which contains also a continuation of the passageway g, is the valve which closes the by-pass c between said by-pass and penstock d. The operation now is as follows: Suppose that the water-wheel were running in normal condition as to load and speed, and that the parts were in ^{the} positions as indicated and that the speed is, by reason of an increase of load or some exterior force, suddenly decreased. This will cause the balls shown in the outline of the governor at the left hand end of the lever u to fly outward and raise the left hand end of the lever u, thus depressing the valve shown to control the supply of water to the hydraulic cylinder r for operating piston s. The valve t, thus being moved downward, will allow the water to enter above the piston s and force it downward, causing the rocker-arm x which operates the water-wheel gate, to swing its left hand end downward and close said water-wheel gate. As the downward motion of piston s takes place, it draws down the right hand end of the lever w and raises the fulcrumed center of the lever u and causes the valve to rise and cut off a further supply of water to the hydraulic cylinder r above the piston s, and thus stopping its motion. Coincident with the motion of the piston s downward, above referred to, due to the supply of pressure on the upper side thereof in the hydraulic cylinder r, the left hand end of the lever j so pulled downward, and the right hand end thereof moved upward about the fulcrum z, and lifting therewith the rod p, the piston l enclosed in the case k, and surrounded by oil or water

q, the first effect of which is to raise the valve-plug i from the opening g through the piston rod e, and the piston b forming the by-pass valve. When the valve i is raised, the pressure above the piston b and under the cover f of the cylinder d enclosing said piston b throughout the length of the passage g, was uniform; but when the valve i raises the pressure is immediately reduced in the passage g and also in the space above the piston b through the openings h in the piston rod e, all of which openings are made larger than the opening that directly connects the passage g with the "compressed water" in the penstock. The pressure above the piston b being removed, the pressure of the water in the penstock a causes the piston b, which is the by-pass valve, to rise and make a direct opening for the escape of water from the penstock through the by-pass c. While the operation just described was taking place, the liquor surrounding the piston l, above mentioned, which is free to move regulator k, was being held in position, as before mentioned, by the rod p and the lever j; but the regulating case k with its superimposed weight was slowly dropping while the liquor above the piston l was slowly passing down through passage n to the under side of said piston l, which operation continued until regulating case k with its tapered valve i had dropped sufficiently to close opening g in by-pass valve b.

If the mechanism disclosed were in normal position and the water-wheel were in normal position and the speed were decreased, the balls shown in the outline of the governor in the left hand end of lever u would be drawn together and the left hand end of lever u would

drop, and, by means of its connection to valve t of hydraulic cylinder r, water under pressure would be admitted underneath piston s and act, through piston rod v and arm x, to open the water-gates to the water-wheel. At the same time that piston rod v was moving to operate the water-wheel gates, it would also throw the lever w and the lever u, operating the valve t, to close off the supply of water under pressure in hydraulic cylinder r under piston f and prevent further motion, and, at the same time, would raise the left hand end of rocking-lever j, which is fulcrumed at the fixed point z, and depress rod p, carrying a loosely supporting piston m in regulator cylinder k. When the piston p was forced downward by the lever j it opened a passage m through piston l in addition to the fixed passage m previously mentioned, and allowed the liquor surrounding piston l to flow with greater rapidity from the space below said piston to the space above it, and allowed the regulating cylinder k to maintain a pressure upon valve i to keep closed the passage g in piston e and valve b. Valve i, maintaining this closure, causes the pressure above the piston b to be greater than that below piston b, because of the larger area of the upper end thereof, and this increased pressure acts to drive piston b downward, closing the passageway between ~~by~~ by-pass c and penstock a. The above description shows that there is coincident action between the operation of water-gates and by-pass valve.

Q. 85. By Mr. Westal: Referring now to Complainant's Exhibit HH, the Lyndon patent in suit, I will ask you to compare the device therein shown and described

with the translation and drawing of the French patent No. 291588 to which you have referred in your last preceding answer, and point out the similarities or differences which you may find in the devices therein disclosed.

Mr. Blakeslee: The same objection as previously noted with respect to Defendant's Exhibit French Patent and Defendant's Exhibit Translation of French Patent.

A. By-pass c on drawing of French patent corresponds to by-pass 47 in the Lyndon patent. Piston or by-pass valve b in the French patent corresponds to the valve 48 in the Lyndon patent. Arm x operating water-gates of the French patent corresponds properly to stem 21b operating water-gates in the Lyndon patent. a in the French patent indicates the penstock which is represented by 1 in the Lyndon patent. All the other mechanism shown in Figure 1 of the Lyndon patent is introduced and designed to accomplish the same results as the mechanism shown in the French patent, and as well the remaining portions of the mechanism shown in the French patent not just mentioned, the object in both cases being to operate a by-pass valve simultaneously with the operation of the water-wheel gates and do it in such manner as to prevent over-run in either case. The French patent does not, of course, show any electrical devices, it being purely a mechanical and hydraulic mechanism aided by centrifugal force in the speed-measuring element.

Q. 86. By Mr. Westall: Referring now to Claim 6 of the Lyndon patent in suit, I will ask you to compare the device therein disclosed with that which you have described as forming the subject matter of the French

Patent No. 291588 about which you have been testifying.

Mr. Blakeslee: The same objection as previously noted with respect to Defendant's Exhibit French Patent and as to the qualifications of the witness to discuss the subject of Claim 6 of the Lyndon patent in suit.

A. All the elements set up in Claim 6 of the Lyndon patent are shown in the drawing and described in the French patent, as follows: "Means for operating the water-gate in either direction" as set up in Claim 6 is disclosed in the French patent by the hydraulic cylinder *r*, its piston *s* and connections to the water-wheel gate. "A by-pass for the water-wheel" is shown in the French patent at *c*. "And a valve controlling said by-pass" is shown in the French patent by *b*. "Of means connected to the water-gate-operating means and operating the by-pass valve inversely to the operation of the water-gate" is shown in the French patent mechanism connecting piston *s* of the hydraulic cylinder *r* with the remaining mechanism shown on the drawing and connecting through to by-pass valve *b*.

Q. 86. By Mr. Westall: Please now make a similar comparison with reference to Claim 7 of the Lyndon patent in suit.

Mr. Blakeslee: The same objection as last noted.

A. In Claim 7, "With means for operating the water-gate in either direction from normal position" is indicated in the French patent by the hydraulic cylinder *r*, piston *s*, piston stem *v*, and arm *x*, operating water-gate in either direction from normal position. "A by-pass for the water-wheel" is provided at *c* in the French patent. "A valve for such by-pass" is provided by the

piston b in the French patent. "Means connected to the water-gate-operating means and adapted to operate the by-pass valve from normal position in either direction" is shown in the French patent by the piston rod v, lever j, fulcrum z, regulating cylinder k with its enclosed mechanism and its valve i, with piston e and by-pass valve b enclosed in cylinder d, with cover f, as heretofore described, and their arrangement is such as to control such by-pass valve inversely to the control of the water-gate during the governing action of the water-gate. "Means for returning the by-pass valve to normal position on completion of the governing movement of the water-gate-operating means" are provided in the French patent by the positions which in actual operation are assumed relative to each other by the rod p, piston l, regulating cylinder k with its attached valve i, by-pass valve b with its rod or piston rod e, and passageway g with openings h, all enclosed in cylinder d with cover f. The above mentioned rod p is connected by oscillating lever to piston-rod v of piston s and hydraulic cylinder r.

Q. 87. By Mr. Westall: What function results or affects, if any, in water-wheel regulation made out, sought for or described in the Lyndon patent in suit, do you find not fully disclosed in the French patent to which you have just referred in your last preceding answer?

Mr. Blakeslee: Objected to as calling for a sweeping conclusion and not for such further comparison or contrasting of the Lyndon invention and the disclosure of Defendant's Exhibit French Patent as may be required of the witness.

A. None, and the object of both of these patents be-

ing to cover such a construction as will maintain a constant flow of water in a penstock when a varying quantity of water from the penstock is discharged to the water-wheel doing useful work.

Q. 88. By Mr. Westall: I now call your attention to Defendant's Exhibit Swiss Patent and Defendant's Exhibit Translation of Swiss Patent, and ask you if you have examined said documents and if you understand the devices therein described and shown.

A. I have examined the documents particularly with reference to the drawings, and I understand the operation as indicated.

Q. 89. Please now explain fully the drawing of Defendant's Exhibit Swiss Patent and explain the operation of the device therein shown in the light of the translation which has been placed before you, stating fully your opinions in regard to the operation and effect thereof, and your reasons therefor.

Mr. Blakeslee: The question is objected to on all the grounds of objection previously urged to Defendant's Exhibit Swiss Patent and Defendant's Exhibit Translation of Swiss Patent, and as being irrelevant, immaterial, incompetent, particularly that the said Swiss patent is not set up in the answer in this case and is not identified, or the apparent copy, being the Exhibit, is not identified. On the further particular ground that the translation is not a properly proved translation. The attention of counsel is again called to our objection as to Defendant's Exhibits Swiss Patent and Defendant's Exhibit French Patent namely, that there is no evidence before the court that these patent or copies of the pat-

piston b in the French patent. "Means connected to the water-gate-operating means and adapted to operate the by-pass valve from normal position in either direction" is shown in the French patent by the piston rod v, lever j, fulcrum z, regulating^{ing} cylinder k with its enclosed mechanism and its valve i, with piston e and by-pass valve b enclosed in cylinder d, with cover f, as heretofore described, and their arrangement is such as to control such by-pass valve inversely to the control of the water-gate during the governing action of the water-gate. "Means for returning the by-pass valve to normal position on completion of the governing movement of the water-gate-operating means" are provided in the French patent by the positions which in actual operation are assumed relative to each other by the rod p, piston l, regulating cylinder k with its attached valve i, by-pass valve b with its rod or piston rod e, and passageway g with openings h, all enclosed in cylinder d with cover f. The above mentioned rod p is connected by oscillating lever to piston-rod v of piston s and hydraulic cylinder r.

Q. 87. By Mr. Westall: What function results or affects, if any, in water-wheel regulation made out, sought for or described in the Lyndon patent in suit, do you find not fully disclosed in the French patent to which you have just referred in your last preceding answer?

Mr. Blakeslee: Objected to as calling for a sweeping conclusion and not for such further comparison or contrasting of the Lyndon invention and the disclosure of Defendant's Exhibit French Patent as may be required of the witness.

A. None, and the object of both of these patents be-

ing to cover such a construction as will maintain a constant flow of water in a penstock when a varying quantity of water from the penstock is discharged to the water-wheel doing useful work.

Q. 88. By Mr. Westall: I now call your attention to Defendant's Exhibit Swiss Patent and Defendant's Exhibit Translation of Swiss Patent, and ask you if you have examined said documents and if you understand the devices therein described and shown.

A. I have examined the documents particularly with reference to the drawings, and I understand the operation as indicated.

Q. 89. Please now explain fully the drawing of Defendant's Exhibit Swiss Patent and explain the operation of the device therein shown in the light of the translation which has been placed before you, stating fully your opinions in regard to the operation and effect thereof, and your reasons therefor.

Mr. Blakeslee: The question is objected to on all the grounds of objection previously urged to Defendant's Exhibit Swiss Patent and Defendant's Exhibit Translation of Swiss Patent, and as being irrelevant, immaterial, incompetent, particularly that the said Swiss patent is not set up in the answer in this case and is not identified, or the apparent copy, being the Exhibit, is not identified. On the further particular ground that the translation is not a properly proved translation. The attention of counsel is again called to our objection as to Defendant's Exhibits Swiss Patent and Defendant's Exhibit French Patent namely, that there is no evidence before the court that these patent or copies of the pat-

ents are predicated upon any issue of letters patent of France or Switzerland, or any publication caused by any such issue, no proof being before the court as to such issuance or publications, or as to any dates involved in any such issuances or publications.

A. Referring to the drawings attached to the patent in question and to Figure 1 thereof, a represents the penstock carrying the water supply. b represents the passage or gateway between the penstock and water-wheel. d represents the valve for closing the water-gate-way to the water-wheel. c represents passageway forming by-pass between penstock a and water-gate-passage way b. g represents a valve for controlling the flow through said by-pass c. In the upper part of the figure m represents a speed-governor which is connected by links, not lettered, to the top of rods passing to piston f which, in turn, contains piston k enclosing spring l and rod e, operating water-gate d. Piston k through connection p and links or bell-cranks h give motion to by-pass valve g. The mechanism above described, consisting of piston f, rod e directly connecting with water-gate valve d, and the interior piston k connecting by means of the connection p and bell-cranks h with valve g, form the operating mechanism for operating the water-gate valve d in conjunction with the by-pass gate g, the operation in general being as follows: Any change in the elements of the speed-regulator m, due to a change of speed, will raise or lower and open or close a valve at n supplying water under pressure to the chamber o above piston f. The valve at n also will allow of the discharge of water from chamber o, above piston f, through the opening

shown below n into the main wheel-case. Pressure supplied in the chamber o acts to force downward the piston f which, acting through the rod e, closes the water-gate valve d; and if water contained in the chamber p changes in existence between the interior of piston f and the annular piston k, the piston k will also be forced downward and through the connection p and the bell-cranks h will open the by-pass valve g in the by-pass c. When the condition of operation of the governing mechanism m is such as to move the valve at n to allow the water-pressure in o to be relieved, the pressure of the water in the penstock against the gate d will raise a rod e and the piston f to its original position, carrying with it the annular piston k with its connection p, connecting to the bell-cranks, and by means of the bell-cranks, to the by-pass gate g. The relative positions maintained between the water-gate d and the by-pass gate g is adjustable by the location of the annular piston k within its cylinder p which is formed on the interior of piston f. The supply of pressure to this chamber comes from the chamber o through a small passage r in the piston f which connects to the chamber p, containing annular piston k. The passage r providing water pressure from chamber o to the space occupied by the annular piston p, is also provided at its lower end with the valve q which closes or opens an opening t for the escape of the pressure in the chamber p above annular piston k. The valve q, is adjustably connected by means of the arms u and the link v to a fixed point on the frame of the mechanism, the object of this mechanism being such that while the piston f is operated on directly from the speed-governor

m and operates directly through the link e to move the water-gate d, that the motion of the by-pass gate g may be made slower or faster than the piston f and the water-gate d, according as the water under pressure in the chamber p is admitted thereto or allowed to escape from fast or slow by the action of the valve q. This construction makes it possible to give to the by-pass valve g a slightly different motion from the motion of the water-gate d, but both of which motions are interdependent one upon the other and act in unison, if not in the same time, and we have then a corresponding motion of the by-pass valve with every motion of the water-gate.

A motion of the water-gate to shut off water from the water-wheel opens the gate in the by-pass, and vice versa.

April 7, 1914. A. M.

By Mr. Westall:

Q. 90. Mr. Cobb, since the last adjournment have you been able to produce any drawing or other illustration showing more clearly the parts of the water governor at Bakersfield not clearly shown in the photographs which had been introduced in evidence as illustrative of the construction of that device at Bakersfield in 1896 and 1897?

Mr. Blakeslee: The same objection with respect to the failure of the alleged Bakersfield plant or Power Development Company plant to come within the pleadings, and as irrelevant, immaterial and incompetent; and it is again to be noted that this objection is urged against any testimony or any purported testimony or evidence with respect to this alleged plant, or any matters con-

cerning it, without the necessity of specifically repeating such objection to each and every question put or at each and every step taken in the proceedings on behalf of the defendant.

A. I have prepared a tracing from which I made several blue prints, one of which I have before me. This blue print shows a plan view, not to scale, of the arrangement of many of the parts of the governing device for water wheel installation at the Power Development Company plant, and is drawn to clarify the location of those parts as shown in the photographs. I have lettered the parts here with the same letters shown on photographs heretofore introduced as exhibits on behalf of the defendant. On this blue print the lines of the governing mechanism shown full represent the position of the parts when the wheels were standing idle, and the position that they assumed whenever water was shut off from the wheels by the main gate in the penstock not shown in this blue print. A few of the parts are shown in another position by dotted lines, which position would be taken when the wheels were operating at something more than half-load—probably three-quarters load. This arrangement of the drawing being introduced simply to give an idea of the relative motions of the parts due to governing action for which the construction referred to on the blue prints was supplied for governing purposes.

Q. 91. By Mr. Westall: This is a plan of the device, is it not?

Mr. Blakeslee: The same objection.

A. A plan view; yes, sir.

Q. 92. By Mr. Westall: The detail drawing at the top of the left hand side of the page, what is that?

A. The detail drawing at the upper left hand corner shows a side view of the connection between the cross-head on the piston rod of the hydraulic cylinder, the rocker-arm R operating the water-wheel gate, and the connecting rod U which operated the by-pass valve J. The detail drawing in the upper right hand corner shows the connection of the connecting rod U through the rocker-arm or crank-arm K to the stem of the by-pass valve J.

Q. 93. Will you please explain a little more fully the action of the different parts when the water having not been turned on is suddenly turned on and the wheels carrying a little more than full load as previously mentioned?

A. The question is put in such a way that it is hard to answer, because the wheel can never carry more than—

Mr. Blakeslee: The same objections are repeated to this line of questions, with the additional objection that this does not call for the best evidence, and no foundation is laid for the introduction of secondary evidence.

Q. 94. By Mr. Westall: Perhaps I can make the question a little more clear. There are dotted lines referred to in your previous answer showing the position of the parts taken on the turning on of the water to the wheel. Will you please describe how the device or the different parts, being at rest, assume those positions and the effect of that changed position upon the water-gate and by-pass valve, referring not only to the drawings now under discussion, but to the other exhibits

which have been introduced as illustrative of this device, if necessary.

Mr. Blakeslee: The same objections, and the objections last noted collectively are to be understood as repeated to all this line of questions, and the further objection is made that the question is indefinite.

A. I would like to have at hand the exhibit showing the outline of the governor construction B. (Defendant's Exhibit M.Z. is produced.) Referring to the blue print before me showing the plan view heretofore mentioned of the position of the governing parts when the wheels were at rest at the time the gates of the water-wheel within the water-wheel case C are wide open, and the governor mechanism shown on Exhibit M.Z. in such position that its levers E are close down to the center of the shaft A, as they can be drawn by the springs S. The bell-crank connection between the levers E, represented in part by the letter L, which connects levers E to collar H, is not shown in either of the drawings; but such bell-crank connection was in existence and operated to transmit the motion of the levers E to and from the center of the shaft A to the collar H, causing the collar H to move longitudinally upon the water-wheel shaft as heretofore testified to. The longitudinal movement of the collar H in the water-wheel shaft caused the upper end of the forked lever I to be moved. Supposing, as heretofore stated, that the positions were all in the position shown by the full lines on the blue print, and that the main gate in the penstock was opened. This main gate is not shown on this blue print, but is shown at E on Defendant's Exhibit Interior of Power Development

Company power house. Then the water having free passage to the wheels will begin to cause revolutions thereof, and such revolutions will increase in rapidity until normal speed for which the governor has been adjusted has been attained. Any increase of speed above that will cause the levers E to throw upward due to centrifugal force and draw the collar H along on the water-wheel shaft to a new position shown by the dotted lines on the blue print above mentioned. When this collar takes this new position, carrying with it the upper end of the forked lever I, it causes the lower end of the forked lever I, as shown on Exhibit ZZ, to move toward the water-wheel cases C, carrying with it the rod V shown on Exhibit ZZ which is connected to the bell-crank M shown on the blue print, and causes the bell-crank M to take the position shown by the dotted lines. This in turn causes the lever N to have first moved the valve-stem O downward, which allows water to enter on the under side of the piston shown by the dotted lines below the letter P on the hydraulic cylinder, causing the piston there shown to rise, we will say, to the position shown by the dotted lines above letter P on the hydraulic cylinder, this motion of the piston carrying floating lever N up to position shown by the dotted lines bringing the valve-stem O, by reason of such motion, back to its original position as shown, and preventing further motion of the piston within the hydraulic cylinder P and holding the water-gates of the water-wheel and the by-pass valve J in proper position to deliver that quantity of water to the wheel which was required to overcome the load at that time being carried. In such position as I have

just described, all the parts in the governor are in balance. The levers E are not in contact with any of the stops provided for restraining its extreme motion or its motion beyond certain limits, but it is floating, as heretofore testified to. And the lever N is in such condition that any motion whatever of the levers EE will immediately move the floating lever N and open or close, so to speak, the valve whose stem is represented by O, and thus admit or allow the escape of water from either side of the piston within the hydraulic cylinder P. Then, it will be seen that, regardless of the position of the parts controlled by the hydraulic cylinder P, the governor has control for the purpose of regulating the speed; and for every new position under any condition of load or speed taken by the levers E, a new position is attained by the piston within the hydraulic cylinder P and, consequently, a new position is taken by the water-gates within the water-wheel cases whose stems are shown by the letter T and the by-pass J through its connection U and its crank-arm K.

Mr. Westall: Counsel for the defendant offers in evidence the blue print referred to and explained in the previous answers, and asks that it be received in evidence and marked "Defendant's Exhibit Cobb Blueprint No. 1."

Mr. Blakeslee: This offer is objected to on all the grounds previously urged with respect to the subject under discussion, and on the further ground that the subject of the purported blueprint is not identified, that the blueprint is not the best evidence, no foundation being laid for the introduction of secondary evidence,

and the alleged subject of the purported blueprint being not shown to exist. If the subject of the blueprint does exist, the blueprint is not, as stated, the best evidence.

Mr. Westall: Counsel for the defendant states that the blueprint referred to has been offered in evidence simply to make clear the witness' previous testimony regarding the construction testified to as having been used at Bakersfield in 1896 and 1897 by the Power Development Company, and has no other purpose than simply to clarify and explain for the benefit of the Court the exact operation of the device referred to.

Q. 95. By Mr. Westall: Referring again to Defendant's Exhibit Swiss Patent, I will ask you to compare, in the light of the translation which has been introduced in evidence, the device of this Swiss patent with that of the Lyndon patent in suit, giving in full your reasons for any opinions you may express.

Mr. Blakeslee: The same objection as urged heretofore against the Defendant's Exhibit Swiss Patent and Defendant's Exhibit Translation of Swiss Patent, and as irrelevant, immaterial and incompetent, notice being again given to counsel for the defendant that no proof has been adduced as to the issuance of any such Swiss Patent or the publication of any of the purported contents thereof.

A. Referring to the drawing attached to the several patents mentioned and to Figure 1 of the Lyndon patent and to Figure 1 of the Swiss patent, a in the Swiss patent is the penstock, corresponding to Figure 1 in the Lyndon patent; d in the Swiss patent corresponds to the water-wheel gate in the Lyndon patent operated by the

valve-stem 21b; valve g in the Swiss patent corresponds to the valve 48 in the Lyndon patent; by-pass passage c in the Swiss patent corresponds to the by-pass passage 47 in the Lyndon patent. All the other mechanism shown for operating the valve d and the valve g in the Swiss patent operates those valves with the same identical results as are attained in the Lyndon patent by all the devices shown in Figure 1 not just mentioned, which operate valve-stem 21b and valve 48 in the Lyndon patent.

Q. 96. By Mr. Westall: I will now ask you, referring specifically to Claim 6 of the Lyndon patent, to compare the device therein described with the Swiss patent referred to.

Mr. Blakeslee: The same objection.

A. Quoting from Claim 6 of the Lyndon patent, "In a water-wheel governor the combination with means for operating the water-gate in either direction, a by-pass for the water-wheel, and a valve controlling said by-pass," in the Swiss patent "means for operating the water-wheel gate in either direction" are shown by the rod e, piston f, its enclosing cylinders, its passages for the introduction or expulsion of water under pressure for operating in either direction the piston f which operates water-gate d in either direction. "A by-pass for the water-wheel" is indicated in the Swiss patent at the letter c; "and a valve controlling said by-pass" is indicated by the letter g which is, in turn, controlled by the piston k to the connection p and the connections h as shown; "of means connected to the water-gate-operating means and operating the by-pass valve inversely to the

operation of the water-gate." The connections just referred to are so arranged that motion of the piston f which controls water-gate valve d also imparts motion to the piston k, which motion may be more or less constrained but which, in turn, controls the by-pass gate g. These motions are such that any motion of the piston f operating to close the water-gate d also operates to open by-pass gate g, and vice versa.

Q. 97. By Mr. Westall: Please now make the same comparison, referring to Claim 7 of the Lyndon patent in suit, and comparing that claim with the device of the Swiss patent to which you have been testifying.

Mr. Blakeslee: The same objection.

A. Referring to Claim 7: "In a water-wheel governor, the combination with means for operating the water-gate in either direction from normal position, a by-pass for the water-wheel, a valve for such by-pass." "Means for operating the water-gate in either direction from normal position" are shown in the Swiss patent by the rod e and piston f with its enclosing cylinder. "A by-pass for the water-wheel" is shown by the passage c leading from the penstock between its main body and the water gate b. "A valve for such by-pass" is shown in the Swiss patent at the letter g. "Of means connected to the water-gate-operating means and adapted to operate the by-pass valve from normal position in either direction" is shown by the links or arms h, the connection P, the piston k enclosed within the previously mentioned piston f, so as to control such valve inversely to the control of the water-gate. The connections, it will be seen are so arranged that any motion of the piston

f operating to close the water-gate d also operates to open the by-pass gate g, and vice versa. Quoting from the Claim, "Means for returning the by-pass valve to normal position on completion of governing movement of the water-gate--operating means". As I have previously testified in reference to that particular statement, it is cloudy to me with regard to its exact meaning; but the only interpretation which I have been able to place upon it is that testified to heretofore, which is to this effect: that for any given load given off by the wheel the water-gate-operating means assumes a certain position. So does the gate of the by-pass g. But in assuming that position or, rather, in hunting for the correct position, they may have momentarily overrun or fallen short of that position, and the action of the mechanism in either of these patents in evidence and under discussion is to bring them into correct position, which is, for the time being, a normal position of the parts for the load at that time being given off.

Q. 98. By Mr. Westall: What effect or result, if any, in water-wheel governing, described by Lyndon, do you find not shown in Swiss patent, to which you have been testifying ?

Mr. Blakeslee: The same objection, and it is objected to as leading and calling for a conclusion.

A. Nothing.

Q. 99. By Mr. Westall: I now call your attention to Complainant's photographic Exhibits E to L, inclusive, and also to Complainant's Exhibits U and V, and ask you to state whether you have heretofore examined those exhibits and whether you understand the machin-

ery and devices therein shown, and the operation and general use thereof.

A. Exhibit E is a photograph showing the interior of a power house.

Mr. Blakeslee: Wait. Let us get a responsive answer. The question should be answered yes or no.

A. Oh, yes; I see. I have.

Q. 100. By Mr. Westall: Will you please again examine said exhibits and state briefly what you understand each to show, stating, if necessary for the sake of clarity, your understanding of the operation and effect of the devices therein disclosed.

A. Referring to Exhibit E, A represents case enclosing the water-wheel; B represents main gate controlling the supply of water to the water-wheels. This gate is inserted in the penstock. D represents a shaft that gives motion to the parts of the governing mechanism; E is the rocker-arm forming a portion of the governing mechanism; F is the frame supporting a portion of governing mechanism; G is a fly-ball governor to operate the speed-controlling mechanism; H is a pulley connected to the fly-ball governor G and receiving its motion from the water-wheel shaft; I is the water-wheel shaft; J represents an electric generator; K is a rod connecting the governing mechanism with the water-gate whose operation will be more fully stated later; L is the stem of the dashpot; M is the adjusting screw of the dashpot; W is a hydraulic cylinder for operating the water-wheel gate; X are connections between hydraulic cylinder W and water-gates. The photograph does not appear clear, but Y appears to be a valve-stem

controlling the supply of oil or water under pressure to the hydraulic cylinder W.

Referring to Exhibit H, QQ is the penstock carrying water to the water-wheel case; PP is a part of the same structure containing the water-operating gate, whose stem is shown at MM; OO is the location of the operating mechanism of the by-pass valve; LL is the shaft carrying the rocker-arm KK which operates the water-wheel gates and by-pass valve; HH is a shaft and rocker-arm connecting the governing mechanism through a connecting rod II to ~~the~~ rocker-arm KK above mentioned; GG are a rack and pinion connected through shaft HH to connecting rod II and rocker-arm KK; FF is the hydraulic cylinder for giving motion to the rack and quadrant GG; DD is a pulley receiving rotary motion from the water-wheel shaft by means of a belt and transmitting same to fly-ball governor CC. At this time I cannot tell whether the letters BB refer to the main operating lever near the arm BB or to the post nearby standing on the rack GG previously mentioned, which operates through lever arms in connection with the dash-pot previously mentioned and shown behind the pulley DD, all of which constitute a returning mechanism.

Referring to Exhibit I, QQ represents the penstock; PP the exterior of the water-gate mechanism of the water-wheel; AA the water-wheel case; WW, OO and SS with pin RR and arms NN below shaft LL operate the by-pass valve; arm NN above shaft LL, in connection with rocker-arm KK and connecting rod II operate main water-gate whose stem is shown at MM.

Referring to Exhibit J, AA represents the enclosing

case of the water-wheel; TT the water-wheel shaft; PP the enclosing case of the water-gate, being also a part of the penstock; NN is the stem of the water-wheel gate; SS is a connection to the stem of the by-pass valve; NN is the lever arm below the shaft LL, operating the by-pass valve; NN, again, above the shaft LL, operates the water-gate of the wheel, both of which move in conjunction with the rocker-arm KK on the shaft LL connected by connecting rod II to the previously mentioned rack and quadrant; FF is a hydraulic cylinder giving motion to the parts just previously mentioned; XX are connections consisting of fixed posts on rack and rocker-arm and piston rod to dashpot, not lettered, whose regulating valve is represented by YY; UU, and VV, represent or are the location of the mechanism connected with the dashpot for bringing about a return to normal position of the water-gate and by-pass valve; CC is the fly-ball speed governor; DD is a pulley receiving motion from the water-wheel shaft TT for operating the fly-ball governor.

Referring to Exhibit K, the several letters refer to the same parts just mentioned as in reference to Exhibit J, this being an enlarged view of a portion of Exhibit J.

Exhibit L is an enlarged view of a portion of Exhibit J, showing water-wheel case AA, water-pressure gauge and pulley TT on the water-wheel shaft.

Referring to Exhibit V, this Exhibit shows an outline drawing of a water-wheel-operating gate; a by-pass valve with its operating mechanism; the gate of the water-wheel and the valve of the by-pass both being operated from connecting rod II attached to lever KK op-

erating about the shaft LL by means of rocker-arm NN, which at its upper end is connected to the water-gate stem MM and at its lower end is connected by means of the pin RR and piston rod UUU which enters dashpot OO; figure 4 are lugs attached to the dashpot cylinder, one of which is on each side of the cylinder, and thus operate the tension rod 2 which passes through said lugs, and they also receive pressure under certain conditions from the springs WW. The dashpot OO is connected by pin 6 and by-pass valve-stem 7. By this construction there is not a fixed or unyielding connection between the piston rod UUU and the by-pass valve-stem 7.

Exhibit U shows mechanism similar to the one just described, but varying in construction details, wherein N represents the stem of the water-wheel gate, U represents the piston rod which, acting through the oil dashpot connects to the by-pass valve-stem, T represents the shaft about which the rocker-arm R, link Q, rocker-arm T and shaft D connect the governing mechanism to the water-gate valve-stem N and the by-pass valve-stem. Other parts shown in this drawing have their names written thereon and are self-explanatory.

Q. 101. By Mr. Westall: Referring now to Complainant's Exhibit HH, the Lyndon patent in suit, and particularly to Claim 1 thereof, I will ask you to compare the construction called for or described in said claim with the Complainant's Exhibits which you have just referred to, and state whether or not you find in said Complainant's Exhibits a device substantially similar or equivalent to that described in said Claim 1, stat-

ing fully your reasons for any conclusions you may express or any opinions you may express.

Mr. Blakeslee: Objected to as calling for conclusions on the part of the witness, and furthermore, that the witness has not qualified to compare the subject of said Claim 1, as an intimate part of the patent in suit, with any other arbitrary devices, with the manifest intention to differentiate. This objection is particularly made with respect to the manifest effect of such inquiry, namely, to interpret the patent in suit or an intimate part thereof. As to any such attempted interpretation the least to be said is that the witness is not qualified.

A. Referring to Claim 1 in the question, and quoting, "In a governor for water-wheels, the combination with a water-gate-operating shaft and a driving-shaft, of a reversing clutch-gear," I do not find the reversing clutch-gear in the exhibits previously referred to. "Adapted to connect the water-gate-operating shaft to the driving-shaft in reverse driving relations," I find no such driving-shaft to connect the water-gate-operating shaft in reverse driving relations. "Means for reversely controlling the operation of such clutch-gear," I find no clutch-gear, and, consequently, no means for reversely controlling the operation thereof. I find no "clutch-gear-controlling means" nor "means for resisting the action of the electro-magnetic device in such manner that at normal speed the clutch mechanism may be disengaged", and I find no such clutch mechanism operated from the driving shaft. I find no clutch mechanism in the exhibits which will operate the water-gate to its operating shaft when speed is increased or decreased from

normal. Further, I do not find any electrical or electrically operated device in connection with Exhibits H, I, J, K or L. Neither do I recognize any such device in Exhibits E, F or G.

April 7, 1914, P. M.

By Mr. Westall:

Q. 102. What is a clutch?

A. A clutch is a mechanism for connecting two parts of a machine so that one of the parts may drive the other. Clutches come under two classes, broadly, one class depending on friction between two surfaces for driving one part of the mechanism from another. I might add further, friction between two surfaces brought into contact with pressure. And another class consisting of interlocking fingers or projections which interlock to transmit motion from one part to another and operate independent of friction in reference to the contact of the parts.

Q. 103. What do you understand by a gear?

A. A gear is a tooth wheel and, in the sense that the word "clutch-gear" is used in Claim 1, being a compound word, would indicate to me that it would be a combination of a gear and a clutch. The drawing shows it to be constructed in that manner.

Mr. Blakeslee: We ask that all that portion of the answer beginning with "in the sense that it is used in Claim 1" be stricken out as not responsive to the question.

Q. 104. By Mr. Westall: Referring then particularly to Claim 1 and to the other claims in which the word "clutch-gear" is mentioned, what do you understand

to be the sense as applied to the device of the Lyndon patent in suit?

Mr. Blakeslee: The objections heretofore made as to the interpretation of this patent and the claims thereof are repeated.

A. As the word occurs in Claim 1 of the Lyndon patent it is a compound word—clutch-gear—and indicates a gear and clutch made in one piece as shown at 10 in Figure 2 of the Lyndon patent and at 9 in Figure 2. There is no such mechanism shown in Exhibits E, F, G, H, I, J, K, or L, examined this morning, for producing the same results.

Q. 105. By Mr. Westall: In the testimony of George J. Henry, Jr., Complainant in this case, question 219 is as follows: “Q—219—Please now indicate and point out in the alleged infringing structures a reversing clutch-gear adapted to connect the water-gate-operating shaft and the driving shaft in reverse driving relations.” The answer to the question is: “A.—The mechanical equivalent of such reversing gear is shown at cylinder FF' in Exhibit H and J, and in the reversing cylinder W in Exhibit G.” State whether or not you agree with the conclusions of the witness Henry, and, if not, please state fully your reasons for not agreeing with that answer.

A. I do not agree with it. The hydraulic cylinders shown in these exhibits, that shown on Exhibit H and Exhibit J being the same cylinder but different views thereof, and the cylinder shown in Exhibit G, being a cylinder of another type of the same style of governor, which performs the same functions exactly as cylinder

FF in Exhibit H and Exhibit J, and my remarks will apply with equal force to either one. This hydraulic cylinder is not connected mechanically with the driving-shaft of the water-wheel. This hydraulic cylinder is not the equivalent of a clutch-gear in any sense that can be conceived by myself. The mechanical equivalent of a mechanism like a clutch-gear must be such a mechanism that by practically the use of the same means it shall produce the same result in substantially the same way. There is absolutely no similarity at all in the operation of the mechanism shown in Exhibits J, G and H, and the operation of the mechanism shown by Figure 1 of the Lyndon patent, excepting in so far as that both show means of operating water-wheel gates in connection with valves for by-pass in penstock.

Q. 106. I will now ask you to read the testimony of the witness Henry beginning with question No. 221 to and including question 229, and all of said testimony being relative to the reversing clutch-gear. Please state whether or not you agree with any of the conclusions therein expressed or any of the opinions set forth.

Mr. Blakeslee: We object to counsel putting an arbitrary construction upon any portion of the testimony of the witness Henry or any other witness, and we object to this question further as being an omnibus question and not directed at the sole subject of inquiry, and, therefore, indefinite.

A. I do not agree with a single one of them.

Q. 107. By Mr. Westall: Please state your reasons, briefly for the opinion you have just expressed.

Mr. Blakeslee: The same objection.

A. I can not conceive of any mechanical equivalent in the device shown in Figure 1 of the Lyndon patent in suit, or the Exhibits referred to in the testimony of Mr. Henry; nor can I see the slightest connection on the slightest similarity of operations between the hydraulic cylinder FF mentioned in his testimony and the clutch-gears 9 and 10 shown in Figure 2 of the Lyndon patent in suit. They are in no way similar in operation; they do not produce their results in the same manner nor by similar means nor by the use of similar operating forces, and they are in no sense equivalents the one of the other. There is no position or place in the mechanism shown in the Lyndon patent where the clutch-gears could be removed with their operating mechanism and the hydraulic cylinder FF introduced to produce exactly the same results in the same way as the parts that were removed would perform. Neither is there any part in the Lyndon patent in ^{suit} ~~such~~ which, taken from Figure 1, could be placed in hydraulic cylinder FF in Exhibits H and J and the hydraulic cylinder W in Exhibit G, and perform the same operations performed by this hydraulic cylinder with the piston and piston rod, as the work is performed by this hydraulic cylinder in the exhibits named. The clutch-gears named in the Lyndon patent in suit involve revolution of parts. There is no revolution of parts in the hydraulic cylinder nor its valve, consequently I can conceive of no mechanical equivalence doctrine that can apply in this connection.

Q. 108. By Mr. Westall: Referring now to Claim 2 of the Lyndon patent in suit, I will ask you to compare the device therein described and claimed with the alleged

infringing devices as shown in the different photographic exhibits which have been introduced on behalf of Complainant as illustrative of said infringing device.

Mr. Blakeslee: The same objection as noted previously with respect to the discussion of Claim 1 of the Lyndon patent by the present witness.

A. Quoting from Claim 2 of the Lyndon patent: "In a governor for water-wheels, the combination with a water-gate-operating shaft and a driving shaft, of a reversing clutch-gear, adapted to connect said shafts in reverse driving relations," I do not find in either of the exhibits submitted, namely, Exhibits E, F, G, H, I or J, and reversing clutch-gear or any mechanism which operates in a similar manner to the reversing clutch-gear mentioned in this claim.

Again quoting: "Electro-magnetic means controlling such clutch-gear." There are no electro-magnetic means for controlling anything in the exhibits mentioned.

Quoting again: "A dynamo connected to be driven by the water-wheel and wound so as to deliver an electromotive force varying in a greater ratio than the speed of the water-wheel, a solenoid connected to said dynamo and a device controlled by said solenoid and carrying a contact device, and energizing connections for the electro-magnetic gear-controlling-means, controlled by said contact device." I find none of these devices or solenoids or dynamo or energizing ^{or} ~~connections~~ ^{connections} for the electro-magnetic gear-controlling-means, nor any mechanism controlled by said contact device, nor any equivalent therefor in Exhibits E, F, G, H, I, J, K or L. I do not find any mechanical equivalent of these devices. The only

parts mentioned in this combination claim which may be considered as occurring in the exhibits mentioned, are the water-gate-operating shaft and the driving-shaft and no other parts mentioned in said claim; and the other parts mentioned in said claim do not occur in the exhibits shown.

Q. 109. By Mr. Westall: Referring now to Claim 3 of the Lyndon patent in suit, please make the same comparison with the photographs and other exhibits of the alleged infringing structure, giving fully your reasons for any opinion you may express.

Mr. Blakeslee: The same objections as last noted.

A. Quoting from Claim 3: "In a water-wheel governor, the combination with a water-gate-operating shaft, and means for operating same in either direction to govern the water-wheel, of a controller for said operating means, responsive to changes of speed of the water-wheel,"

Mr. Blakeslee: Let the record show that the witness who has testified he has fully and carefully examined the patent in suit and the exhibits referred to has halted in his answer at the beginning of this observation a minute and a half, during which he has apparently attempted to frame an answer.

Mr. Westall: We deny that the witness has withheld his answer and deny that counsel looked at his watch or has any means of estimating the length of time that the witness has taken.

Mr. Blakeslee: Counsel held his watch and inspected it for a minute and a quarter of the time charged, and estimates that at least a half a minute expired before he

took his watch from his pocket, and we are still waiting for the answer.

Mr. Westall: Has counsel taken into consideration the time that was spent by the Examiner at the telephone?

Mr. Blakeslee: That was prior to my first remark on the record, during which no word was spoken by anyone present excepting some remark which could not be followed and which the witness apparently directed to counsel.

A. "In a water-wheel governor, the combination with a water-gate-operating shaft, and means for operating same in either direction to govern the water-wheel" are shown in Exhibit J as follows: The water-gate-operating shaft may be shaft LL in Exhibit J or shaft HH in Exhibit H, and "means for operating same in either direction to govern the water-wheel," "means for operating same in either direction to govern the water-wheel," "~~means for operating same in either direction to govern the water-wheel~~" are shown by the hydraulic cylinder FF in Exhibit H and Exhibit J. "Of a controller for said operating means, responsive to changes of speed of the water-wheel." In Exhibits J and H the only mechanism responsive to changes of speed in the water-wheel are the fly-ball governor CC in Exhibit H and CC in Exhibit J.

"A returning device for said controller" is not found in connection with the controller responsive to changes of speed CC, because the positions of the parts of CC assumed for any given speed remain the same, while the speed remains the same, and there is no return until

the speed has changed, and hence I do not find the returning device for said controller.

“Provided with a clutch connection to said operating-shaft.” There is no clutch-connection between the controlling device CC and the operating shaft LL.

There are no means shown in this exhibit “actuated by said controller on movement thereof from normal position to engage said clutch with the said shaft, so as to cause the return of the controller to normal position and interrupt the governing action before it has overrun the proper amount.” There is no “clutch with said shaft”, and consequently there is no return of the controller to normal position; and in the exhibits shown there is no return to normal position of the parts of the fly-ball governor CC without a change of speed. All the parts mentioned in Claim 3 as being in combination are not to be found in the Exhibits H and J in combination to act in the same way or in substantially the same way by similar mechanism; nor is the mechanism described in Claim 3 in any sense an equivalent of the mechanism for producing similar final results as shown in Exhibits H and J.

Q. 110. By Mr. Westall: Referring now to Claim 4 of the Lyndon patent in suit, please make the same comparison with the photographs and other exhibits showing the alleged infringing devices, and state whether or not in your opinion the same elements or groups of elements are found as called for in the claim referred to.

Mr. Blakeslee: The same objection as noted to the last question concerning Claim 3.

A. Quoting from Claim 4: "In a water-wheel governor, the combination with a water-gate-operating shaft, a driving-shaft and reversing clutch-gear," I find a water-gate-operating shaft in Exhibit J at LL; also at LL on Exhibit H.

"A driving shaft" I do not find in either of the exhibits or in any of the exhibits submitted by Complainant, and "a reversing clutch-gear", I do not find a reversing clutch-gear.

"Adapted to turn the water-gate-operating shaft in either direction." There is no such clutch-gear adapted to turn the water-gate-operating shaft in either direction.

"A controller, responsive to changes of speed of the water-wheel and controlling such reversing gear". There is a controller responsive to the change of speed in the water-wheel at CC in Exhibits H and J but it does not control a reversing or reversing-clutch-gear.

"And a returning device for said controller provided with actuating means controlled by said controlling means to return the controller to inoperative position." There is no returning device in the speed-measuring device CC in Exhibit J and CC in Exhibit H which returns to a former position by any other means than a change of speed.

"Provided with actuating means controlled by said controlling means to return the controller to inoperative position." I find no mechanism in the device for controlling the motions within the hydraulic cylinder in Exhibits H and J which correspond to similar mechan-

ism or with any mechanism shown in Figure 1 of the Lyndon patent in suit, and as described in this claim "by said controlling means to return the controller to inoperative position, so as to prevent excessive movement of the governor." I do not find any equivalent in the means for connecting the speed-controller CC with the hydraulic cylinder FF in Exhibits J and K with the means shown in the Lyndon patent for controlling the motion of the water-wheel gates between said gates and the specially wound dynamo for controlling the speed. There is no similarity whatever in the mechanism shown in the exhibits and the mechanism described in the patent either with regard to the means employed or principles of operation, and they are neither one the mechanical equivalent of the other, both showing an entirely distinct and different method of controlling the gates of the water-wheel in conjunction with the control of the gate of the valves in the by-pass from the penstock carrying water to said water-wheel.

Q. 111. By Mr. Westall: Please now make the same comparison as to Claim 5 of the Lyndon patent in suit with the alleged infringing devices as exemplified in photographs and other exhibits introduced on behalf of the Complainant.

Mr. Blakeslee: The same objection as noted with respect to the question calling for similar comparisons of Claims 1, 2, 3 and 4.

A. Quoting, "In a water-wheel governor, the combination with a water-gate-operating shaft, a driving-shaft and a reversing clutch-gear, adapted to connect

said shafts so as to cause the water-gate-operating shaft to move in either direction, a dynamo operatively connected to produce an electro-motive force responsive to the speed of the water-wheel, a solenoid device energized by said dynamo, a core for said solenoid and a circuit-controller actuated thereby, springs for holding the circuit-controller in normal position, two electro-magnetic devices for reversely operating the reversing clutch-gear, a returning device adapted, when operated, to return the circuit-controller to normal position, a clutch adapted to bring said returning device into operative connection with the water-gate-operating shaft, a magnet controlling said clutch and a circuit for said magnet including a circuit-closer operatively connected with the aforesaid circuit-controller and adapted to energize said magnet on movement of the circuit-controller in either direction."

The only two parts mentioned in this combination which I can discover in use in the Exhibits H and I previously mentioned, are the water-gate-operating shaft and a driving-shaft. Every other specific piece of mechanism mentioned in the combination of Claim 5 is not found at all in the mechanism shown in Exhibits H and J. The reversing clutch-gear mentioned in Claim 5 is not found in the Exhibits; neither is there any device found therein operating in substantially the same manner as the reversing clutch-gear. There is no dynamo to be found in Exhibit H nor Exhibit J, no solenoid, no core for said solenoid, no circuit-controller, no springs holding the circuit-controller, no electro-magnetic device for reversely operating the reversing clutch-gear. There

is no reversing clutch-gear. There is no returning device adapted when operated to return the circuit-controller. There is no circuit-controller in the exhibit. There is no clutch in the exhibit adapted to bring the said returning device into operating connection with the water-gate-operating shaft, nor is there any magnetic control set forth, nor any circuit for said magnetic control including a circuit closer, nor are there any such devices ^{any} operatively connected with the aforesaid circuit-controller adapted to energize said magnet on movement of the circuit-controller in either direction.

Mr. Blakeslee: In addition to the objections registered against the questions which have been put as to the comparison of the subjects of Claims 1, 2 and 5 with the various exhibits of Complainant, the attention of the Court is called to the admission of the present witness that he is not skilled in electrical matters or electrical engineering.

Q. 112. By Mr. Westall: Referring now to Claim 8 of the Lyndon patent in suit, please make the same comparison with the alleged infringing devices as exemplified in the photographic and other exhibits introduced on behalf of Complainant, as illustrative also of the infringing devices.

Mr. Blakeslee: The same objection is noted as was noted with relation to the questions relating to these comparisons of the subjects of the claims of the patent.

A. Quoting from Claim 8. "In a water-wheel governor, the combination with a shaft for operating the water-gate in either direction from normal position, a by-pass for the water-wheel and a valve for such by-pass

normally held in partly open position, of an operating device for said valve provided with means for returning the valve to normal position, a clutch, adapted to connect said operating device for the by-pass valve with the water-gate-operating shaft to control the by-pass valve inversely to the water-gate, reversing means for operating the water-gate-operating shaft in either direction, a controller, responsive to the speed of the water-wheel and controlling said reversing means, and means operated by said controller to bring the aforesaid clutch into operation and to release said clutch when the governing action is effected.” I find in Exhibits H and J a water-gate-operating shaft which will operate the water-gate in either direction from normal position; I find a by-pass for the water-wheel on Exhibit U and a valve for such by-pass also on Exhibit U, an operating device for said valve, shown on Exhibit U. “A clutch adapted to connect said operating device for the by-pass valve with the water-gate operating shaft” is not found in Exhibits H nor J nor U. Exhibits H, J and U show a mechanism adapted to connect said operating device for the by-pass valve with the water-gate-operating shaft, and to control the by-pass valve inversely to the water-gate which is constructed and operates entirely independent of any clutch-mechanism. “Reversing means for operating the water-gate-operating shaft in either direction” is found in Exhibits H and J. “Controller responsive to the speed of the water-wheel” is found at CC in Exhibits H and J, this controller being responsive to the speed of the water-wheel and controlling said reversing means. “Means operated by said controller to bring aforesaid

clutch into operation" are not found in the Exhibits H, J or U, nor do these exhibits show any mechanism to release said clutch when the governing action is effected.

Q. 113. By Mr. Westall: Referring now to Claim 9 of the Lyndon patent in suit, please compare the device therein claimed and described with the devices illustrated and shown in Complainant's Exhibit Photographs and Drawings of the alleged infringing device.

Mr. Blakeslee: The same objections as previously noted to the previous questions concerning these comparisons of the parts of the claims.

A. Quoting: "In a water-wheel governor, the combination with a shaft adapted to operate the water-gate in either direction from normal position, a by-pass for the water-wheel and a valve for such by-pass, normally held in partly-open position, of means adapted to operate said valve in either direction and provided with means for returning the valve to normal position, a clutch adapted to connect such operating means with the water-gate-operating shaft, a driving-shaft and a reversing gear for turning the water-gate-operating-shaft in either direction, a dynamo connected to the water-wheel, so as to be responsive to the speed thereof, an electro-magnetic device connected to said dynamo, a controller operated by said electro-magnetic device and controlling the said reversing-gear, a magnetic device controlling the aforesaid clutch for the by-pass operating-means, a circuit for said magnet and means operated by said controller in its movement in either direction to close such circuit." In Exhibits H and J we find a shaft adapted

to operate the water-gate in either direction. In Exhibit U we find a by-pass for the water-wheel and a valve for such by-pass. We find means adapted to operate these valves in either direction. We do not find in these Exhibits any clutch adapted to connect such operating means with the water-gate-operating shaft. We do not find any driving shaft and a reversing gear for turning the water-gate-operating shaft in either direction. We do not find any dynamo connected with the water-wheel so as to be responsive to the speed ~~theory~~, *there*, nor any electro-magnetic device connected to said dynamo, nor any controller operated by said electro-magnetic device and controlling said reversing-gear, nor any magnetic device controlling ~~said reversing gear, nor any magnetic device controlling~~ the aforesaid clutch for the by-pass operating means, nor any circuit for said magnet, nor any means operated by said controller in its movement in either direction to close such circuit, nor do we find any device for operating the water-gates by a driving-shaft as above mentioned, nor do we find the mechanical equivalent of any of these electrical devices mentioned. A mechanical equivalent of such electrical device must perform its functions by substantially the same means, in substantially the same manner, and produce substantially the same results as those employed in the claim. None of such devices appear in the exhibits.

Q. 114. By Mr. Westall: I now call your attention to the testimony heretofore taken on the part of the Complainant of C. L. Cory, beginning at question 326 on page 331 of the record, and ask you to read that tes-

timony down to and including question and answer No. 334 on page 333 of the record, and state whether or not you agree with the opinions therein expressed and, if not, to state your reasons for any disagreement which you may express.

Mr. Blakeslee: Objected to as being an omnibus question and not calling for an answer on a single definite issue, and, therefore, as being indefinite; that it is calling for mere conclusions on the part of the witness and not a proper method of proof. And, furthermore, it is further objected to in so far as it involves the electrical features with which sort of questions the witness has stated he is not familiar with or, at least, not skilled in the consideration of. And on the further ground that the witness has not qualified as to such part of the question as relates to any comparison of the subjects of any of the claims of the Lyndon patent in suit as such.

A. I do not agree with the opinions expressed in the testimony just read for the reason that I do not consider the mechanism shown on blueprint KKK the mechanical equivalent of the mechanism shown in Figure 1 of the Lyndon patent in suit, because there are no parts shown on the blueprint KKK which operate using substantially the same means, operating in substantially the same manner to produce substantially the same results. On the blueprint there is absolutely no mechanism involving any electrical contacts, electrical circuits; there are no parts involving the use of solenoids or magnets; the parts are entirely mechanical and hydraulic in their operation; there are no frictional or tooth clutch-gears and the parts shown on blueprint KKK are in no sense nor

in any sense the mechanical equivalent of the parts illustrated in Figure 1 of the Lyndon patent. An illustrative of this condition, the speed-operated element, fly-ball governor marked C on the blueprint KKK is in no sense whatever the mechanical equivalent of the specially wound dynamo marked 8 in the Lyndon patent. The valve-operating shaft marked F on the blueprint marked KKK is in no sense similar in its operation to the valve-operating-shaft 49 and 20 of the Lyndon application. The shaft F, as shown in blueprint KKK, is simply a rocker-shaft and at no time makes a complete revolution. It is in the usual sense not an operating shaft at all; it is simply a rocker-shaft for transmitting motion between two arms attached thereto and is not a shaft for transmitting motion as indicated by No. 20 or No. 49 in Figure 1 of the Lyndon patent. These examples, I believe, are sufficient to illustrate my contention that the devices indicated on blueprint KKK are not the equivalent of the devices shown by Figure 1 of the Lyndon patent in suit.

April 8, 1914, A. M.

Q. 115. Mr. Cobb, you testified as to the state of the art prior to the date of the application for the patent in suit. You mentioned a certain governing device in use at the North Star Mine at Grass Valley. Can you produce any drawing or pictorial representation showing the device described generally by you in answer to previous questions?

Mr. Blakeslee: Objected to as not within the pleadings, no mention of any such installation being made in

the answer in the case, and that it is irrelevant, immaterial and incompetent.

A. I can.

Q. 116. By Mr. Westall: Will you please produce the drawing showing such device, and after producing it, please explain the operation, object and effect of the device, making any comparisons you may think necessary with other devices which have been described by you, for the sake of clearness, and stating in full your reasons for any opinions you may express.

Mr. Blakeslee: The same objections, and these objections will be considered as repeated to all testimony offered on this line of questions.

Mr. Westall: It is pointed out by counsel for the Defendant that this evidence is only introduced in corroboration of the testimony of the witness as to the state of the art, and, therefore, does not need to be specially pleaded in the answer.

A. I have before me a blueprint of a drawing that was dated September 3, 1898, covering the construction of a nozzle and governor for a 5-foot water-wheel for the North Star mines in Grass Valley, California, and made in the office of Cobb & Hasselmeyer, mechanical and hydraulic engineers. This drawing illustrates one of several installations that we set up for the North Star Mining Company, and is illustrative in a general way of all the constructions that they installed at that time. Before proceeding to letter the blueprint, I wish to state that the problem to be solved by the construction shown on this blueprint was to regulate the speed of a water-wheel. The water-wheel was located at the lower end of

a long penstock or pipe-line which, I have previously testified, had taken from it many other supplies of water to isolated water-wheel plants, which were opened and closed frequently, and all of which tended to produce an extreme variation of pressure in the water at the lower end of the penstock where this particular installation was located. Consequently the pressure of the water in the penstock at this location was affected not only by the quantity of water which passed through the particular gates shown on this drawing at any instant, but was affected by the quantity of water passing through the gates of water-wheels located sometimes more than a mile distant from this same installation. Consequently, it was impossible to attach directly to this installation or to this governing mechanism, which was provided to regulate the speed of the water-wheel, a mechanism to maintain uniform pressure in the penstock, because that pressure, as heretofore stated, was caused to vary by forces outside of this individual construction. Consequently, it was necessary to devise some scheme independent of water-wheel speed governor for controlling the pressure in the penstock. With that understanding in mind, I will represent the penstock in this installation by the letter A, the water-gate for water-wheel, B. The fly-ball governor for indicating changes of speed is represented by C. The hydraulic cylinder for operating water-wheel gate is represented by D. F represents the valve controlling supply to the hydraulic cylinder D. E represents a floating lever. Let H represent the arm connecting the piston of the hydraulic cylinder D with the connecting rod I leading to the rocker-shaft J, con-

necting to the speed governor by the link K, said link K connecting with the end of the floating lever E opposite to the end of the lever E which is connected to the fly-ball governor C. The operation of this mechanism in practice was as follows: Suppose the mechanism in operation, that is to say, water being supplied from penstock A, water-wheel W through water-gate B, which is partially open as shown in the end view at X. The speed-governing mechanism C will then be revolving with its parts in a certain position. Suppose now that the load on the water-wheel W be decreased and its speed tends to increase. Then the centrifugal elements, the balls in the governing mechanism C, would fly outward and would cause the left hand end of the floating lever E to be depressed which, acting upon the balance line valve F, would cause water under pressure passing through said valve to enter beneath the piston in the hydraulic cylinder D, causing the piston to rise and close or partially close the water-gate B. When the piston in the hydraulic cylinder D rises, it carries with it the long pin at H; connected to the outer end of this long pin it carries with it the connecting rod I connecting to the rocker-arm J which in turn, by means of the connecting rod K, is connected to the right hand end of the floating lever E. The upward motion of the piston then closing the gate would tend to raise the right hand end of the floating lever E cutting off the water supply from the lower side of the piston, holding the water-gate at a proper position for the proper supply of water to the water-wheel w. If the wheel, being in operation under normal condition of speed and load, had its load suddenly increased

instead of decreased as just illustrated, the operations just heretofore explained would take place reversely. That is, so as to supply more water to the wheel. This mechanism operated to control the speed of the wheel in the most satisfactory manner when the pressure in the penstock was uniform within reasonable limits. But, as heretofore stated, that uniform pressure in the penstock was impossible at all times and for the reasons stated. Consequently, an additional device was provided on the penstock of this installation which would regulate the pressure within from three to five pounds of normal under all conditions of the flow of water in the penstock, and, as I have heretofore stated, that mechanism had to be independent of the mechanism shown on this blueprint, because of the forces acting in the penstock to cause increase or decrease of pressure therein were applied to the penstock at points remote from this particular installation.

Q. 117. By Mr. Westall: To further aid in explaining to the court the operation of the last mentioned device, can you produce any circular or pictorial representation of any part of the device?

A. I can. I can show an illustration of the complete device.

Q. 118. Will you please produce the same and explain fully the operation of the device therein shown?

Mr. Blakeslee: The same objections as last noted.

A. I have here a circular published at my instigation as the senior member of the firm of Cobb & Hasselmeyer, setting forth a device that I designed for maintaining practically uniform pressure in the penstock in the instal-

lation just described, and which device was applied to many other penstocks for accomplishing the same purpose. The circular that I have here is descriptive of this device and explains its objects and operation quite fully. But I will say that in this device the penstock is represented by the letter A, and air-chamber above the same is represented by the letter Z; between the air-chamber Z and the penstock A there is introduced an auxiliary valve body represented by the letter Y, containing therein a check-valve X. At one side of the chamber Y there is provided a by-pass outlet V controlled by the automatic pressure-valve W. In some cases several of these outlets were provided on the air-chamber Y. In the illustration only one such outlet is shown. The operation of this device was as follows: At a time when the pressure in the penstock A was considered normal, the automatic valve W was adjusted so as to just maintain that pressure without opening to discharge water, and the water would stand with its upper level in the air-chamber at some point as indicated by the dotted line S, and the check-valve X would be closed, and all the parts ^{standing} being in balance. That is to say, the pressure of the water in the penstock A and the pressure of the air in air-chamber Z above the surface S of the water would be the same, and the valve W was so adjusted as to just prevent that pressure from allowing any flow through the by-pass V. If from any cause due to shutting off of water suddenly or the entrance of water suddenly into the upper end of the penstock, the pressure therein was increased, that pressure would first act to raise the check-valve X, compressing the air in

Z above the surface S of the water in the air-chamber, and the surface S would rise to a new position indicated by the dotted line S', compressing the air in the air-chamber Z above this new surface S' to a higher pressure than the automatic pressure-valve W was able to hold. The consequence would be that at the instant that flow through the valve X ceased by reason of the impulse given to same from the pressure in the penstock A, that it would close by its own weight, and the increased pressure of the air in the upper part of the air-chamber Z would cause the automatic valve W to open and the water that had been entrapped in the air-chamber Z between the surfaces S and S' would be discharged through this automatic valve to the passageway B, and the whole mechanism instantly became returned to its normal position and became ready for operation. This device then just explained was applied to the penstock for the governing mechanism shown on the blueprint heretofore mentioned as being a nozzle and governor for a 5-foot water-wheel at the North Star Mine, and it gave very satisfactory results under all conditions prevailing, and is an illustration of the state of the art at that time in the endeavor of those working therein to devise such mechanism as would maintain uniform pressure in the penstock irrespective of quantities of water being used on water-wheels at any instant.

Mr. Westall: Counsel for the Defendant offers in evidence the blueprint just previously spoken of as "Defendant's Exhibit Nozzle and governor for North Star Mines, Grass Valley, California, September 3, 1898. Sheet 27."

Counsel for Defendant also offers in evidence the circular just referred to by the witness as "Defendant's Exhibit Cobb Pressure-regulating Device Circular."

Mr. Blakeslee: After the offer of the first of the two Exhibits just tendered, we object to the Exhibit as it manifestly is not a nozzle and governor; in the second place, we object to this blueprint ^{as} being offered in evidence on the ground that it is not identified, is not the best evidence, no foundation has been laid for the introduction of secondary evidence, no proof of what may have or may not have been included in the alleged installation purported to have been installed in 1898 at Grass Valley, California. And, further on the grounds ^{other} heretofore urged in connection with the testimony of the witness concerning this alleged installation, that it does not come within the pleadings in this case, no mention of the same having been made in the answer of the Defendant. And, finally, therefore, that the same is irrelevant, immaterial and incompetent, and not concerned in any way in proving any of the issues involved in this suit.

As to the second of the two Exhibits just offered, we object to such offer on the ground that it likewise does not come within the pleadings in the case, not being mentioned in the answer of the Defendant herein, not being proven, not being the best evidence, no foundation being laid for the introduction of secondary evidence, not the best evidence and not proof in any capacity of any of the things purported to be disclosed in such circular. Further, that it is irrelevant, immaterial and incompetent, and not proper proof in any respect in this case.

Mr. Westall: As before stated, the Exhibits referred

to in the objection of counsel are introduced only to show the state of the art prior to the Lyndon application, and, therefore, it is not necessary that they be specially pleaded.

Mr. Blakeslee: This is an action in equity, and the last paragraph of Section 4920 of the Revised Statutes provides as to the notice to be given to Complainant in patent suits in cases in equity, and no such notice was given to Complainant as to these alleged prior devices under discussion.

Mr. Westall: It is not necessary to go into an argument as to the provisions of Section 4920. Counsel for the Defendant is perfectly familiar with the Section and with the Decisions thereunder.

(The said Exhibits so offered in evidence are thereupon marked respectively:

("Defendant's Exhibit Nozzle and Governor for North Star Mines, Grass Valley, California, September 3, 1893. Sheet 27". and

("Defendant's Exhibit Cobb Pressure-regulating Device Circular", together with the title of the court and cause and the date upon which the said respective Exhibits were offered in evidence.)

Q. 119. By Mr. Westall: Referring now to Defendant's Exhibit Cobb Pressure-regulating Device Circular, I will ask you to state when that circular was published, if you know.

Mr. Blakeslee: The same objections as previously noted in regard to this exhibit, and also on the ground that it is leading, and does not call for the best evidence as to the publication.

A. I don't remember exactly, but I think after July 1897 on account of the fact that it contains extracts from an article published by The Engineering News of New York, July 8, 1897.

Q. 120. By Mr. Westall: When did you first put that device into operation?

Mr. Blakeslee: The same objection.

A. I cannot recall the exact date. It was put in at the Grass Valley plant, it was put in at the Palace Hotel, it was put in on the Blue Lakes Water Plant, all those installations being right along in a bunch about the time this circular was issued, and I have not at hand anything right at this minute that would indicate exactly the date, and I don't remember them otherwise.

Q. 121. By Mr. Westall: Do you remember the year?

Mr. Blakeslee: The same objections, and the previous objection to any of this line of testimony are repeated without further specifically repeating them.

A. The Grass Valley installation must have been about October, 1898, to the best of my knowledge and belief. The installation in the Palace Hotel was prior to that, to the best of my memory, and the installation at the Blue Lakes I do not recall at this time but I can discover it from my notebooks. It was in the same general time, but the exact date I believe I could recall from my notebooks which I believe I have not here with me.

Q. 122. By Mr. Westall: State whether or not the device forming the subject matter of Defendant's Exhibit Cobb Pressure-regulating Device Circular and the blueprint which you have previously explained, was a

successful and operative device, and whether or not it fulfilled the purposes for which it was designed.

Mr. Blakeslee: Objected to as leading and calling for a conclusion.

A. It was operating successfully to my certain knowledge the last time I was at the Grass Valley installation.

Q. 123. By Mr. Westall: How long ago was that?

A. In the fall of 1898.

Q. 124. Assuming, contrary to your previous testimony and to the testimony of some ~~of~~ Complainant's witnesses, that the Lyndon patent in suit discloses an operative and practical device, what do you understand to be the essence of the invention or the main principle upon which ~~the~~ Lyndon was working in producing this device?

Mr. Blakeslee: Objected to as calling for an arbitrary interpretation of the Lyndon patent and of the disclosures thereof, and for conclusions, and, further, on the ground that as to any such arbitrary and sweeping conclusion or attempted interpretations of letters patent, the witness is not qualified.

Q. 125. By Mr. Westall: And in doing so, I will ask you to state your reasons in full for any opinions you may express.

Mr. Blakeslee: The same objection.

A. From the reading of the Lyndon patent I reached the definite conclusion that the object of his device was to maintain a constant flow and incidentally a constant pressure in the penstock without regard to the quantity of water being supplied directly to the wheel at any instant. He had without doubt knowledge of the fact that a sudden opening of the water-wheel gates instantane-

ously reduced the pressure in the penstock in the immediate neighborhood thereof, and that a sudden closing of the water-wheel gate increased the pressure in the penstock in the immediate neighborhood thereof, and in an effort to prevent this fluctuation of pressure due to the action of the water-wheel gate, he introduced the by-pass. Consequently, my view of the effect is as stated,—that the prime object of his device was to maintain uniform pressure in the penstock, irrespective of the quantity of water being supplied to the water-wheels at any instant.

Q. 126. By Mr. Westall: Referring now to Defendant's Exhibit "Cobb Pressure-regulating Device Circular," and Defendant's Exhibit "Nozzle and Governor for North Star Mines, Grass Valley, California, September 3, 1898, sheet 27", and the device therein shown and disclosed which you have heretofore described, please compare the object and purpose of such device with that of the Lyndon patent as to the objects and results accomplished and sought to be accomplished.

Mr. Blakeslee: Objected to as calling for a conclusion and not for a comparison of working structures, and the functions thereof.

A. From my experience with a prior installation of water-wheels at the same location and on the same penstock as was located the water-wheel and nozzles shown in the Exhibit, I was aware of the conditions prevailing there wherein the pressure in the penstock was exceedingly variable, and at the time when the question arose as to the installation of further water-wheels in this same plant, I devoted attention to the problem of regulating

the pressure in the penstock, or, in other words, overcoming the ram action therein due, as I have previously testified, to the handling of other water-wheels from the same water supply and from the same penstock. There was already on the penstock at the Grass Valley installation a large air-chamber, which was common to apply to such installations at that time. I turned my attention in an effort to make the air-chamber on the one designed for providing an elastic medium for handling the excess pressure. So at this installation at Grass Valley I designed the device shown in "Defendant's Exhibit Cobb Pressure-regulating Device Circular" to fit in between the air-chamber that was then in place on the penstock of the Grass Valley installation and the penstock itself. Now, the object of that device was in connection with the operating mechanism of the nozzles and gates of the water-wheels to maintain, as far as possible, a uniform pressure in the penstock, regardless of what the nozzles were doing on the particular wheels in this particular installation or regardless of what the nozzles were doing on the other wheels on other installations that were taking their water supplies from the same penstock. As I have previously stated, it was impossible under the conditions to design a proper device for regulating this pressure which was immediately or directly attached to the governing mechanism of the water-wheel, because they were not the only water-wheels using water from this penstock, and, consequently, were not every time the initial cause of the fluctuation of the pressure. The operation in practice was as had been hoped for, that an increase in pressure sufficient to cause the automatic

valve W to open in the penstock would cause it to open and prevent a serious increase of pressure in the penstock, and it assisted in regulating the water-wheels in that it did not require the governors to make so many movements for the purpose. The objects of the device shown in these two exhibits was identical with the object shown in the construction of the Lyndon patent, being the question of maintaining, as far as possible, a uniform pressure in the penstock, regardless of the quantity of water being used by the water-wheels at any instant.

Mr. Westall: So far as I can now say, this completes the direct examination of the witness; but the right to recall the witness is reserved if it may be necessary to produce other matters which have not yet been received. You may cross-examine.

CROSS-EXAMINATION

By Mr. Blakeslee:

Mr. Blakeslee: Reserving all the objections noted of record as to the several purported defenses or several purported matters presented by the defense, which Complainant contends do not come within the pleadings of this case, notice of the same not being given in the answer, and which, at the final hearing, it will be contended cannot be considered by the Court, and as to which reference is made to the record on the direct examination of this witness, and all of which things are therefore contended to be irrelevant, immaterial and incompetent and not concerned in any of the issues presented in this suit, I will proceed to cross-examine the present witness. But such cross-examination is not to be considered as a con-

fession that any such mentioned things have been properly brought into or admitted to be brought into this case by the defendant. I so cross-examine as to these matters, with other matters, if there be such, coming within the pleadings of this case, for the reason that the Defendant has given notice of a certain motion to amend the answer, such motion not having as yet been disposed of by the Court. Although such motion will be opposed, a ruling upon the same will, of course have its due effect upon the past and present procedure in this case. Similar reservations are made as to the objections registered with respect to the other matters presented by the Defendant, in cross-examining this witness, all of such objections being also reserved in connection with this cross-examination of the present witness. Such objections include the objection registered with respect to the testimony relating to the Defendant's Exhibit Lamb Patent, and to such exhibit, namely, that such Lamb patent is pleaded in the answer as a prior publication, and not as a matter of fact. The exhibit shows upon its face that the purported publication of this Lamb patent is not a publication prior to the date of the invention of the Lyndon patent in suit.

Q. 127. Referring to Defendant's Exhibit Lamb Patent, Mr. Cobb, is there any one gate in this Lamb patent disclosure which controls all of the nozzles supplying water to the wheel?

A. Not that is operated on by the governor. There is a main gate probably let into these penstocks that, I presume, is left out of all discussion here.

Q. 128. Does the Lamb patent show at any place or

describe at any place any one gate which controls all of the wheel-nozzles 6?

A. It does not.

Q. 129. Is there anything then disclosed in the Lamb patent which enables the governor ^{ing} of the water supply to the wheel or the buckets on the wheel through all these nozzles?

A. There is nothing shown in the Lamb patent determining the water in all the nozzles; but the object of the Lamb patent was to produce such a construction as would govern the speed of the wheels uniformly, and the governing of the wheel at uniform speed is effected by the use of the nozzles 7 and 8 there shown.

Mr. Blakeslee: We will ask that all that portion of the answer following the first sentence be stricken out as not responsive, and will ask the witness to confine his answers to the questions. If he wishes to elaborate any answer he may do so; but I will ask him kindly not to volunteer any statement which does not come fairly within the question.

Mr. Westall: Counsel for the defendant insists that the answer given by the witness is an elaboration of his answer and is within the terms of the question asked.

Mr. Blakeslee: The question speaks for itself.

Q. 130. How many nozzles do you find in the Lamb patent disclosure?

A. Five operating to revolve the wheel in the direction of doing work, and one operating to retard such motion.

Q. 131. And as to these five mentioned, how many have any gate device?

A. One.

Q. 132. And, therefore, I take it, there is nothing shown in this Lamb patent device which enables more than approximately one-fifth of the water passing to the wheel nozzles to be shut off, that is, water which is applied for positively or directly rotating the wheel? Is that correct?

Mr. Westall: Counsel for the defendant objects to the question in that the patent itself states that less than five nozzles or any number of nozzles may be employed, and that the patentee does not limit himself to any particular number of nozzles.

Mr. Blakeslee: We object to counsel coaching the witness. The witness can refer to the patent as much as he wishes without any assistance.

A. Only one-fifth can be cut off as applying directly to give force for the operation of the wheel in normal direction. But at the time that this $1/5$ is cut off from operating on the wheel in its normal direction, another one-fifth is discharged upon the wheel in a direction to retard its revolution, and, in that respect, has the effect to act upon the wheel as if more than one nozzle of the driving nozzles had been closed off, so far as regulating the speed of the wheel is concerned.

Q. 133. Wouldn't it be more correct to say another one-sixth than another one-fifth?

A. The maximum power of the wheel is given by the five nozzles, and two of them can be so manipulated that when one of the five nozzles is entirely closed off an auxiliary nozzle may be made to discharge water against the wheel in an opposite direction to its normal revolution,

this retarding that revolution in much the same manner as revolution would be retarded by partially cutting off another of the five nozzles, which is not shown to be provided with a special device therefor.

Q. 134. Now, assuming that the one driving nozzle is cut off and what is referred to in the Lamb patent at line 50, page 1, as the brake nozzle is opened up, you will have one nozzle acting to retard the wheel and four nozzles acting to positively impel it, will you not?

A. Yes, sir.

Q. 135. Now, in the Lyndon patent there is but one gate valve disclosed, is there not, aside from the by-pass valve?

A. The gate valves are all operated from one shaft, 21b, in the Lyndon patent.

Q. 136. And any operation of the shaft 21b in the Lyndon patent affects any gate valves there may be in that construction? Is that not correct?

A. I assume that to be correct.

Q. 137. You don't find anything in the patent to the contrary?

A. Nothing found in the patent to the contrary. The details of the gates are not shown, but that would be reasonable to presume to be the fact.

Q. 138. So that I take it there is this distinction between the Lamb patent disclosure and the Lyndon patent disclosure, namely, that it is possible to throttle in the Lyndon patent disclosure all of the water passing through the wheel to impel it, whereas in the Lamb patent disclosure it is only possible to throttle one-fifth of the water passing to the wheel to impel it, plus the pro-

vision of one brake nozzle for applying retarding water against the impelling action of the water also applied through four nozzles? Is that correct?

A. That is correct.

Q. 139. Now, further, in the Lamb patent disclosure you don't find any by-pass, do you, which discharges water to the tail-race or from the penstock independently of the wheel, do you?

A. Not independently of water that has not struck the wheel.

Q. 140. All the water passing at any time through any of the water-supply passages or conduits or nozzles in the Lamb patent disclosure must necessarily impinge upon the wheel, must it not?

A. Yes, sir, on the assumption that it leaves the nozzle with sufficient force to reach the wheel, which practically always would be the case.

Q. 141. But there would be an extreme variation between the wheel-retarding action permitted in the use of the Lamb patent disclosure and wheel-retarding action permitted in the use of the Lyndon patent disclosure?

A. It is not correct as it appears to me because in the Lyndon patent the number of nozzles used there to drive or retard the wheel is not limited, and in this patent it could be provided with an equal number of retarding nozzles and driving nozzles, and, further, because of the fact that in order to regulate for speed only and where the main gate in the penstock, not shown in the patent, is providing water suitable to maintain a given speed for a given load, then ordinary variation in the

speed may be taken care of by the supply or withdrawal of comparatively small quantities of water to the wheel. That is to say, small quantities in proportion to the whole quantity being supplied. Or, in other words, if a wheel constructed similar to that set forth in the Lamb patent were driving a certain load at a certain speed, and the load varied sufficiently to make the speed vary a sensible percentage of the normal speed, then the quantity of water required to be added to the supply to the wheel or deducted from the supply to the wheel to bring the speed again to normal condition would be only a small proportion of the total quantity of water used on the wheel for producing power alone, without any reference to regulation. Hence, the construction in the Lamb patent, as I have shown, is competent to regulate speed although loads may vary.

Q. 142. You don't find anything in the disclosures of the Lamb patent which indicates that Lamb comprehended that there might be one driving nozzle and one brake nozzle, do you?

A. I do not remember anything occurring in the text to that effect at this moment. It has been over a week since I read the text and I do not quite remember as to that.

Q. 143. Suppose he provided one driving nozzle and one brake nozzle. When the driving nozzle was wide open the brake nozzle would be entirely closed, would it not?

A. Yes.

Q. 144. And when the driving nozzle was half way open and the brake nozzle was half way open, what would be the effect upon the wheel?

A. The wheel would probably revolve in the direction of the driving nozzle because of the fact ~~that~~^{of} the form of the buckets being better adapted to receive the energy of the water from the driving nozzle than the energy from the retarding nozzle. But that point, as I remember, is set out in the specifications of the Lamb patent wherein he states, on line 64 of page 1, "The proportion of driving nozzles to the brake nozzle may be varied to suit conditions. As at present shown, I have illustrated my invention provided with five driving nozzles and one brake nozzle which will provide for a variation of nearly 50% of the load, and that is more than usually required." That would indicate that he had full knowledge of the advisability of varying the number of either driving or retarding nozzles according to the conditions or results that he desired to attain in any particular installation.

Q. 145. All right. Now, suppose there were one driving nozzle and one brake nozzle in a construction following the Lamb patent disclosures, and they were relatively open so that the proper flow of water took place through both to hold the wheel from revolution by opposite stresses on the wheel. There would be a waste flow of water through the tail-race, would there not?

A. So far as giving energy to the wheel under the specific condition named, all the water would be wasted through the tail-race.

Q. 146. And when the gates of the Lyndon patent disclosure are closed, no waste water is passing to the tail-race, is there?

A. All of it is going to the tail-race when the water-gates are closed.

Q. 147. I mean no waste water is passing to the tail-race by the way of the wheel, is there?

A. Not by way of the wheel, but by way of the by-pass.

Q. 148. Is there any means shown in the Lamb patent disclosure for stopping the wheel other than by the application of these opposite jets of water in balanced relation to the wheel?

A. There are no means shown on the drawing other than that, and my interpretation of these drawings would indicate that the apparatus therein shown was never intended to stop the wheel at all and is not practical to use for that purpose, and not designed for that purpose. To stop the wheel as drawn in the Lamb patent, it is necessary to cut off the supply of water in the main penstock.

Q. 149. Then we are getting just where I expected. The Lamb patent device necessarily contemplates the installation of a water-gate in the penstock in addition to the nozzle 7, does it not?

A. As far as the drawing in the case shows it is necessary to have the gate in the penstock to close off or admit water to the water-wheel.

Q. 150. And no such gate is shown in the Lamb disclosure, is there?

A. No, sir. The installation of such a gate is common in all installations, so far as my experience goes.

Q. 151. And there is no suggestion in the Lamb patent disclosure providing such a gate and hooking it up with the governor control disclosed in the Lamb patent, is there?

A. No, sir. The Lamb patent simply handles the water to regulate the speed and handles it in such a way as not to change the pressure of the water in the penstock. That is all he was endeavoring to accomplish.

Q. 152. Now, you say that when the Lyndon patent gate or gates is or are closed, all the water will be discharged from the penstock through the by-pass. How do you account for that being possible when the Lyndon patent specifically discloses that consequent upon any governing action the by-pass will slowly return to a given position?

A. He discusses, if I remember the text of his patent correctly, that his by-pass returns to a position of half-open when the wheel is operating, as I remember it, under normal conditions. Now then, a wheel whose water-gates are closed, is not operating in a normal condition.

Q. 153. I am speaking of periods of non-operation. Let it be assumed that the by-pass in the Lyndon patent is normally closed. Then with the gates closed, there would be no water passing from the penstock through the by-pass or to the wheel either, would there?

A. If the water-wheel gates shown in the Lyndon patent are closed and if the by-pass were closed, no water would pass from the penstock except ordinary leakage.

Q. 154. And in the Lamb patent disclosure there is no means shown for terminating the flow of water to the wheel, is there?

A. Not in the drawing of the Lamb patent.

Q. 155. And you don't find any such suggestion in the specification?

A. No; I cannot remember any such suggestion. It is a matter of common practice to have a valve in the pipe-line.

Q. 156. And that valve would in no way be controlled by the Lamb device?

A. Governing mechanism; no, sir.

Q. 157. Do you consider the nozzle gate in the respect that it passes water to the wheel for direct action upon the wheel a working nozzle?

A. It is a working nozzle in so far as it works to retard the revolution of the wheel, but it is not a nozzle placed there for the purpose of providing what may be called useful work in the wheel. It is for retarding or offsetting or nullifying the useful work done on the wheel by nozzles 7 and 6, as shown in Figure 1 of the Lamb patent. The work done by nozzle 8 is useful only as a retardant, for which purpose it is installed.

Q. 158. Do you consider that that nozzle 8 is entitled to the description of a by-pass with respect to the working zone of the wheel?

A. Incidentally to its construction it is a by-pass. It is inserted in the construction for the purpose of supplying water to retard the wheel, water that has already been cut off from supplying the wheel with useful energy, and in that respect it maintains a uniform flow in the penstock and acts, so far as the wheel itself is concerned, much the same as if the greater quantity of water had been cut off from energizing the wheel, as by nozzle 7, and the less quantity of water allowed to escape and by-pass, as at nozzle 8. The effect in both cases would be

identically the same on the useful work given out by the wheel 2.

Q. 159. But the nozzle 8 does not pass any water by the wheel without striking the wheel, I believe you have said?

A. The drawings would indicate that no water passed nozzle 8 with sufficient velocity that does not strike the wheel 2.

Q. 160. Therefore, in that sense, that is, the sense of passing water by the wheel, the nozzle 8 is not a by-pass, is it?

A. It is not a by-pass in the ordinary sense, but its action is identically the same upon the wheel as would be caused by a by-pass operated in the same manner as I have just described in my answer to the previous question.

Q. 161. But you will admit that it does not pass by the wheel without acting directly upon the wheel?

A. Certainly. That part is correct.

Q. 162. And, in that respect, namely, that it applies the energy of water to the wheel for the production of a certain physical result, it is a working nozzle, is it not?

A. As I answered to a previous question, the water discharged against the wheel by nozzle 8 does work contrariwise or in opposition to the work done by the water discharged upon the wheel by nozzle 7, as being typical of the other nozzles 6.

Q. 163. Now, in the Lyndon patent device, any water flowing through the by-pass 47 imparts no energy whatsoever for the production of any effect whatsoever to the wheel? Is that not correct?

A. That is correct. The water passing the by-pass in the Lyndon patent does not by coming in contact with the wheel have any effect thereon whatever.

Q. 164. In other words, it does no work at all?

A. It does no work.

Q. 165. I call your attention to the group of parts in the lower portion of Figure 1 of the Lyndon patent controlling the action of by-pass nozzle 48, and which the specifications discloses causes the slow return of the by-pass valve to normal position after such valve has operated conjointly with the water-gate. Do you find in the Lamb patent disclosure any analagous means or any means serving to operate the valve 9 in the nozzle 8 independently of the valve 9 in the nozzle 7 and after conjoint action of these valves has taken place?

A. I do not.

Q. 166. In other words, there is always a definite step relation, is there not, between any action between valve 9 in the nozzle 7 and any action of the valve 9 in the nozzle 8?

A. I understand that to be true. I believe it is true in the Lamb patent as such relations would fulfill the conditions or requirements that he was endeavoring to accomplish as disclosed by his patent in question.

Q. 167. As a matter of fact, the Lamb patent device is essentially a wheel-brake device, is it not?

A. No, sir; it is a speed-governing device.

Q. 168. Well, in that respect, it is a wheel-brake device? In other words, water is applied to the wheel to brake its action by opposing the direct impelling action of the water applied to the wheel? Is that not correct?

A. That is not quite correct, because while he applies water to have a braking action on the wheel, he cuts off a portion of the impelling water at the same time.

Q. 169. And that accentuates the braking action, does it not?

A. Yes, sir; it accentuates the braking action and also reduces the impulsive action or the net effect of the impulsive action of the driving water.

Q. 170. And in the Lyndon patent disclosure do you find any conduit and valve specified through and by which the admission of water to the wheel is permitted and which in any sense can have a braking action or retarding action upon the rotation of the wheel?

A. I do not.

Q. 171. Nor is there present in the Lamb patent any by-pass in a water-supply pipe or conduit through which water may flow with or without regulation, independently of the circuit of water to the wheel? That is correct, is it not?

A. Yes; that is correct as I understand the question.

Q. 172. And there is no disclosure in the Lamb patent, is there, that this device will provide for a variation of fifty per cent of the load or more?

A. The particular drawing shown in the Lamb patent would probably provide for something over 35% of the load, and it would appear that it is not impossible to so arrange the nozzles as to provide for any proportion of it they saw fit.

Q. 173. How do you calculate that 35% with four totally unobstructed nozzles being resented and only two nozzles capable of relief regulation?

A. I will explain that. Assume a condition of operation where the four nozzles marked 6 are wide open, and also the nozzle marked 7 is wide open, and the nozzle marked 8 entirely closed. That must necessarily be the condition of the wheel where it would give 100% of its power. If I now close nozzle 7 entirely, we will assume we cut off 20% of its power; and if I have opened nozzle 8 to its full capacity I have applied to the wheel in an opposite direction to one of the nozzles 6 an equal or larger quantity of water. But we will say, for example, an equal quantity of water to that supplied by nozzle 6 which, if it were applied to a bucket of equally good form, would take off another 20% of the power of the nozzle heretofore referred to. But I do not believe in practice it would be quite true, so I assume for the sake of making an answer that the nozzle 8 would only cut off 15%, thus deducting 35% in all from the 100% previously mentioned.

Q. 174. Now, referring to the Lyndon patent, let us assume that governing action causes a 90% closing of the gate and a 90% opening of the by-pass valve, as the first case; and, as a second case, that governing action causes a 90% opening of the gate-valve and a 90% closing of the by-pass. What in such an installation would you calculate to be the load fluctuation so provided for?

A. Practically 90% of the load.

Q. 175. When valve 9 of nozzle 8 in the Lamb patent is opened or partially opened, will there not be a back-thrust of water upon the column in the penstock?

A. There will not, because there can be no time in the operation of the wheel as here shown when the pres-

sure behind the buckets of the water-wheel would equal that pressure in front of it. Consequently, the pressure in nozzle 8 must at all times be less than the pressure in the penstock, and there could be no reverse action or kick-back due to the revolution of the wheel in opposition to the direction of the flow in nozzle 8.

Q. 176. I note that a certain statement was made in page 2 of the Lamb patent terminating in lines 36 to 38, as follows: "This prevents the backward thrust of the water causing too much friction on the moving parts." Does not that imply that there will be some back-flash or back-kick through these nozzles?

A. Not at all. I will endeavor to make that thrust question clear. Owing to there being any pressure whatever or due to any pressure whatever in nozzle 8, there will be a thrust acting to force the valve 9 in the direction of its stem 12, which thrust-action will be in proportion to the cross-sectional area of the stem 12. The same is true of the valve 9 back of nozzle 7. The pressure within the valve 9 and in nozzle 7 tends to thrust the valve 9 in the direction of its stem 12 by a force proportional to the cross-sectional area of such stem. That is the thrust first referred to and taken care of as indicated. The reason that prevents the backward thrust causing too much friction is that the load of the back-thrust is transferred by stem 12 to a center about which the stem is free to revolve and is not distributed over the large area forming the end of the main body of valves 9, the result being that the force of friction is constrained to work on a much less radius and, consequently, not offering so much resistance to the movement of the valve.

Q. 177. However, there is a back-kick in any stream of projected water, is there not?

A. When any stream of water is projected from a nozzle there is a reaction. That is to say, there must be some force to hold the nozzle against that reaction which is caused by the column of water coming in contact with the atmosphere.

Q. 178. Now, do you find disclosed in the Lamb patent at any point any such means as is disclosed in the Lyndon patent for preventing the over-running of the governor, as, for instance, the parts including the clutch-members 22 and 23 and the electro-magnet 32 for energizing the same, such clutch-members tending to restore the core 34 of the solenoid 33 to normal position?

A. I do not; and in the case of a wheel governed as is indicated in the Lamb patent or in a wheel where the speed regulation is effected without change of pressure in the penstock, said over-running of the governor is infinitesimal in proportion to what the over-run would be were there no provision made for maintaining uniform pressure in the penstock.

Q. 179. Let us assume that there are more extreme fluctuations of pressure in the penstock. Does not the danger of over-running or governor-hunting, as I believe you have referred to it, arise?

A. Extreme variations of pressure in the penstock caused by quick opening or closing of the gates to a water-wheel cause great difficulty in the governing mechanism finding proper location. But the fault is not in the governing mechanism itself; the primary fault is the fluctuation in pressure. The governing mechanism by its

own sensitive actions being responsive to changes of pressure, causes the hunting or overrunning where these fluctuations are excessive.

Q. 180. And you do not find anything in the Lamb patent to correct any such overrunning or hunting, do you?

A. I do to this extent; that the Lamb patent provides means for discharging such water from the penstock by one valve as it cuts off from the water-wheel by another valve. This combination ^{of action} acts to maintain uniform pressure in the penstock.

Q. 181. Supposing the generator operated by the wheel of the Lamb patent were running at full load, and the main fuse in the line from the generator should blow. Wouldn't this cause such a violent and immediate fluctuation in the load on the wheel that its overrunning tendency would be present?

A. Such a case as that indicated by a generator being operated at full load with a wheel constructed as set forth in the Lamb patent, and the load being immediately released, the whole load being immediately taken off the water-wheel, the water-wheel would in that case far overrun its normally intended speed. But the Lamb patent further provides, although not shown in the drawing, that the number of nozzles acting to retard the revolution of the wheels may be any desired number,—the same as the number of nozzles supplying water to the wheel may be of any desired number. Consequently, it is fair to assume that if he were to operate an electric generator with a wheel designed under his patents, that he would provide a sufficient number of retarding nozzles

to take care of the full load of work done, in which case the action as indicated by his drawings would be much as follows: that immediately upon the release of the load on the water-wheel there would be an increase of speed to operate the speed-governor shown, I believe at 30 in Figure 4 of the Lamb patent, which would immediately act to close the nozzles supplying energizing water, and to open the nozzles supplying the retarding water to hold the revolutions of the wheel within reasonable control.

Q. 182. Supposing half ^{of} the load were taken off of the wheel by the blowing of fuses in the power-line supplied by the wheel controlling the supply of energy to half of the power-consuming apparatus. Would there not be such fluctuation in the load of the wheel thus caused that there would be a governor-hunting action prior to the restoration of exactly the proper ratio between load and water-supply?

A. So long as the arrangement of nozzles and the number of nozzles shown in the Lamb patent was so arranged and operated in such manner as to maintain uniform pressure in the penstock, as has been heretofore testified to, that is to say, that when the gates closing off the energizing water acted coincidentally with the gates opening to discharge water from the penstock, the whole maintaining a uniform pressure in the penstock regardless of the position of the water-wheel gate, then any sudden change of load on the water-wheels would only produce a momentary change of speed in the water-wheels and act on the governing mechanism to control the gates mentioned, and this momentary action is mo-

mentary because of the fact that the pressure in the penstock remains uniform regardless of the position of the gate, and operates to prevent hunting of the governor.

Q. 183. And you think the wheel would go to its proper new speed in the first phase of governor action, do you?

A. By "first phase" you mean the first motion giving more speed or less speed?

Q. 184. Yes.

A. I do not. There is nothing shown in any of these patents in question, either the Lamb or the Lyndon patent, that would indicate that the governor would do that in the first phase of its action under any circumstances.

Q. 185. But a device to prevent or to, in the main, eliminate such overrunning action, is a desirable and even necessary element in a proper water-wheel governor, is it not, where wide fluctuations of load take place?

A. Where wide fluctuations of load take place close governing is necessary. Whether that shall be effected by having an overrunning-preventing device or not is immaterial, because the same results can be effected by governors acting without having any particular and special over-running devices by reason of their other forms of construction, and by reason of the fact that they provide uniform pressure in the penstock.

Q. 186. Isn't such an over-running-prevention means or anti-governor hunting means used within your knowledge of the art in installations where these violent load fluctuations have to be met with?

A. I know of installations, where no so-called over-running device is in use, that gives practically perfect

regulation. The installation at Grass Valley that was introduced here this morning gave regulation satisfactory to all concerned, and it has no special over-running device specially constructed. The installation at Bakersfield, California, has no specially constructed so-called over-running device. That is the best regulation of any water-wheel made up to its time.

Q. 187. That plant that you have testified to, namely, the so-identified 1897 Power Development Company plant near Bakersfield, is not now in operation in the form in which it was installed, is it?

A. I have no recent knowledge of what is installed in the power plant at Bakersfield. The plant, as I left it there, has been in operation for some time and, as I believe, was maintained in operation for some time thereafter. The wheels that were there at the time I left it I know were ~~were~~ taken out and others tried on the same shafts. They were endeavoring at that time to find some water-wheels to put on those shafts which would give a higher efficiency than those they had on them, and different water-wheel makers were endeavoring to provide such wheels.

Q. 188. You know, do you not, of devices being used in connection with governors of hydro-electric plants to prevent the over-running of such governors?

A. Yes, sir.

Q. 189. Can you state the name of any such device for preventing over-running, as it is known in the trade?

A. No, sir; I cannot. The Lombard governor or the governor that I recognize as being of the Lombard type provides a mechanism that, for any position taken sud-

denly by the speed controlling mechanism, a certain balance valve may be brought with reasonable speed to a position from which it had just been moved by the action of the speed-governing device above mentioned.

Q. 190. What does that valve do in such construction?

A. That balance valve supplied water or oil under pressure to operate the piston in a hydraulic cylinder.

Q. 191. And what did that piston do?

A. By means of proper connections it operated the gates of the water-wheel.

Q. 192. And the by-pass in the penstock also?

A. It could do so and in some cases does do so, but I am speaking now strictly of the Lombard governor. It simply gives motion to a piston which you can connect up any way you want to.

Q. 193. Away back in 1897 did you know such a device as the Lombard governor device?

A. No, sir.

Q. 194. Did you ever see such an one?

A. I have seen them in power houses, but never paid particular attention.

Q. 195. Would you recognize one by its general appearance if you saw it?

A. I think so. I think I could tell some of the salient parts of it if I saw it. I have seen pictures of it.

Q. 196. Please look upon the table and see if you can see among the exhibits present anything which you would call such a Lombard governor device or part thereof.

Mr. Westall: Objected to as not proper cross-examination.

A. I would say from my casual inspection of these parts on the table that they were taken from a Lombard governor. I do not know it for sure, but they look like pieces that I have seen in illustrations of a Lombard governor.

Q. 197. By Mr. Blakeslee: Now, in a water-wheel installation in which all of the water passing through the wheel is controlled by a gate or gates under the final control of a governor, does not a water-ram always occur in the penstock under violent fluctuation or material fluctuation of speed of the wheel and synchronous governing of the gate?

A. Not if uniform pressure is maintained at all times in the penstock.

Q. 198. And how would you maintain such uniform pressure in the penstock?

A. By maintaining a uniform flow.

Q. 199. And how would you do that?

A. By allowing as much water to escape from the penstock at any instant as I cut off from the wheels at any instant.

Q. 200. And another way to do that would be through a by-pass, would it not?

A. It would.

Q. 201. Now, coming back again to the Lamb patent, inasmuch as all the water flowing through the penstock must go to the wheel, even under governing actions, you have not the same conditions present, have you, as you would have in an installation in which there were a gate or gates controlling part of the flow from the penstock to the wheel and in which you also have a by-pass like-

wise permitting the escape of part of the water from the penstock independently of the wheel? Is that ^{not} correct?

A. It is not.

Q. 202. Please state why not.

A. It is not, because in a completely designed wheel under the general scheme set forth in the Lamb patent, we can assume that there would be just as many nozzles, for the sake of example, to supply retarding water, having just the same capacity as there are nozzles to supply energizing water. Then if we so connect those that the exact quantity of water cut off from energizing nozzles be allowed to flow through the retarding nozzles, and vice versa, we maintain under those conditions a continuous and uniform flow in the penstock and also uniform pressure therein, regardless of the final effective energy given off by the wheel.

Q. 203. Well, that is just the understanding that I have arrived at from your testimony, and I am asking you whether that is not a condition which is very different from the other condition assumed, namely, when you have a gate which controls the passage of part of the water, namely, that which goes to the wheel, and a by-pass which controls part of the water, namely, that which does not go to the wheel. Now, there is a very different condition existing in these two cases, is there not, with respect to water ram in the penstock?

A. There can be no water-ram in the penstock where the conditions of flow do not change.

Q. 204. Well, then assume the elimination of the by-pass. How about the water-ram then?

A. Assuming a penstock operating without a by-pass

and that water-wheel gates were opened or closed suddenly, then water-ram might occur in the penstock and probably would.

Q. 205. Whereas, in the Lamb device if there be a constant ratio inversely between the nozzle areas, that is, the areas of the nozzles supplying water to impel the wheel directly and the nozzles applying water to retard the wheel, such water-ram, I take it from your testimony, would not occur? Is that correct?

A. Well, water-ram would not occur in any penstock regardless of the conditions or construction of water-gates as long as no change of flow takes place in the penstock. And any conditions that you are ^{to}amid^{to} assume, as long as there is no change of flow and no force acting to change the flow or to change the vedocity of flow in the penstock,—there can be no water-ram in the penstock.

Q. 206. Then under the conditions assumed in my last question there would not be a change of flow in the penstock? (Question No. 205 is read.)

A. That is not correct, but I think I can indicate more clearly why not. The question refers to areas of nozzles discharging water inversely upon the wheel and naturally one may assume that the pressures in those areas would be equal in both cases, and their effect upon the wheel equal, which is not to my understanding true. But if the question meant to infer that the valve opening supplying energizing water was increased in its amount of opening by just the same amount or area that the valve supplying retarding water was closed, then I could say there would be no ram action, because under those conditions

there would be no change of velocity of flow of water in the penstock.

Q. 207. Then following the Lamb patent disclosure and making the distinction you have just made, it is quite likely that there would be some ram action in the penstock?

A. No, sir; because as I told you as much water as I closed off by one valve I allow to escape through another, and consequently my flow must remain constant.

Q. 208. Whereas, in the use of a gate such as is provided by Lyndon, sudden closing of the gate would produce such a water-ram in the penstock were it not for a by-pass, would it not?

A. Yes.

Q. 209. And that is a very definite distinction between the disclosures of the Lamb and Lyndon patents, is it not?

A. No, sir, because you have not included in the distinction in the statement concerning the Lyndon patent—you have only asked it in reference to closing the water-wheel gates if there were no by-pass. Now, if there is no by-pass provided in the Lyndon patent and you were to suddenly close the water-wheel gate, you would get a water-ram. And that corresponds to my understanding of your question regarding the Lyndon patent. Now then, applying the same question in my mind to the Lamb patent, if you fail to operate the so-called retarding valves, one of which is indicated at 8 in Figure 1 of the Lamb drawing, and only operate valves controlling nozzles similar to 7 in the same Figure, that would also pro-

duce under the same conditions of sudden closing of the valves ram in the penstock.

Q. 210. And in the Lyndon device the opening of the by-pass allows an escape of water independently of the wheel, whereas the opening of this brake-action nozzle in the Lamb device passes water to the wheel, does it not?

A. While it passes water to the wheel, it allows the proper escape of water and the required escape of water just the same if it discharged water independent of the wheel; but the object of the ^{Lamb} ~~ram~~ in providing this escape of water to the wheel was simply to produce a quicker action on the wheel and to regulate its motion.

Q. 211. In other words, a distinct application of the force of the water to the wheel with the consequent physical effect upon the wheel?

A. He makes a double use of the water by means of nozzle 8 or any number of such nozzles on the wheel. The first use of it is that it allows of a uniform flow of water in the penstock, and its additional use is to use the water passing through these nozzles 8 as a retardant to the revolution of the water-wheel.

Q. 212. Now, in view of your testimony that devices such as the Lombard governor have been perfected for preventing overrunning of governors, do you consider that the device of the Lamb patent meets the requirements of the present day practice as to governing in connection with hydro-electric plants?

A. I believe that where the saving of water used in a wheel installation was not a question, that is to say, where the quantity of water passed for wheel operation was unimportant, that using the Lamb patent as a basis

of design and following out the constructions there indicated, that a properly operating water-wheel to correspond to the average conditions of electric power plants could be constructed.

Q. 213. Did you ever see or hear of a hydro-electric water-wheel governor constructed as you understand the disclosure of the Lamb patent?

A. Not precisely like the Lamb patent.

Q. 214. Did you ever hear or know of such a governor being constructed in which part of the water struck the wheel in one direction and part in another to effect governing action?

A. I never have seen such a device except as disclosed in the Lamb patent.

Q. 215. Now, referring to this so-called North Star installation, as we will call it, which you have stated was installed about 1896 at Grass Valley, is that the same one that was later modified to constitute the so-called 1898 Grass Valley or North Star installation?

A. No, I think not, if I understand what you are getting at. There was an installation put in at Grass Valley in 1896. I am not sure about this. And then later an additional installation was put in and that was about the 1898 installation.

Q. 216. That 1896 installation had no by-pass, did it, to the penstock?

A. No, sir.

Q. 217. And it had no means as we have discussed it for preventing over-running of the governor independent of such direct governing action as there was?

A. As I recall it,—if I had time I could look it up in

my notebooks—as I recall the installation at Grass Valley now, the governing device applied to the wheels was not satisfactory. The one I now refer to is the original installation at Grass Valley and the one which was in use when there was no relief on the penstock, and the one provided, I think, by the people who provided the buckets on the wheel.

Q. 218. How long was that operated, if you know?

A. I believe I changed the governing mechanism on that installation some time in 1898. That is, I believe the designs I made were introduced there. I do not remember whether I personally was present when they put on the original installation there or not, but I designed the scheme and I presume I was present, because I was there at the plant considerable.

Q. 219. What was done with the power generated with that plant?

A. The original plant, the power developed by the wheel was used to run an air compressor.

Q. 220. What was done with the power generated by the so-called 1898 North Star plant?

A. The main installation there was always an air-compressor.

Q. 221. In a plant of that sort big speed variations were permissible, were they not?

A. In a sense, as compared to, for instance, an electric light plant, they were permissible. But as a matter of fact, in that plant the regulation was such that the speed was uniform and was, so far as I know, perfectly satisfactory in respect to its uniformity. There was no means that we had at that time in that plant for deter-

mining that it was not uniform. It was exceedingly satisfactory.

Q. 222. If the speed had not been uniform there would have been no material effect upon the action of the compressor, would there?

A. Not at all.

Q. 223. And that differentiates materially from the conditions which are proper in operating an electric-energy generating plant?

A. Not necessarily, because we had our nozzle and governor operating an electric generator there, and it also could operate the air-compressor, and there was no trouble about the operating of that electric generator by exactly the same governing devices that were operating the air compressors.

Q. 224. But what I mean is constant speed is far more necessary in operating an electrical generator than in operating a compressor?

A. There is no doubt about that. But the device installed at Grass Valley did operate an electric generator in a satisfactory manner.

Q. 225. But it did not have any of the features we are discussing here, such as the by-pass and means for returning such by-pass to normal position, and means for preventing the governor overrunning, did it?

A. It did not require those contraptions because it had the best devices that we could supply for providing even pressure in the penstock.

Q. 226. And that device, briefly stating again, was what?

A. It was a combination of an air-chamber with an automatic opening valve.

Q. 227. And where was that placed?

A. On the penstock within the power house.

Q. 228. And it allowed the escape of water from the penstock?

A. Under certain conditions.

Q. 229. And you say it was automatic and was not connected with any governing device?

A. It was not, for the reasons that I have stated heretofore in my testimony, that it had to operate independently of the wheels within this power house, because the pressure in the penstock was affected by water wheels at a distance from this power plant, and beyond the control of this power plant, and, consequently, in order to attempt to maintain any uniformity of pressure in the penstock at this power plant it was necessary to have some device which received its whole and sole operating energy from the penstock itself.

Q. 230. Then this relief device simply acted after a sufficient pressure had been caused or produced in the penstock? Is that correct?

A. It acted for every increase in pressure in the penstock.

Q. 231. Of a certain definite amount?

A. It took a little—a pound or two—to operate it. But just as soon as that increase occurred it was impossible for us at that time to—or, rather, we did not at that time come across any better device for maintaining a uniform pressure than the one that was built. It was a pioneer attempt in trying to overcome defects

known to exist under such conditions, and, so far as the speaker knows, was entirely pioneer work, and it worked well; so well that the Blue Lakes Water Company afterwards introduced one on their penstock near the power house where they had no other conditions to contend with than simply the operation of their own wheels.

Q. 232. And this device was entirely automatic in its action I understand?

A. Yes, sir; that was one of its specially good features when you consider the conditions under which it was proposed to have it apply.

Q. 233. Do you know of any such relief devices being used today in connection with the penstock of hydro-electric plants?

A. I don't know of any inserted in any modern plant. I have not been in touch with them, anyway. I do not know whether they have done it or not.

Q. 234. In other words, that line of work was abandoned in standard practice and in substitution therefor these other various means, such as by-passes controlled by governors, were taken up subsequent to 1896 or 1898? Is that not correct?

A. Well, sometime about 1895 or 1896 the question of by-passing the water was being worked on. But, at the same time, that question, as you state it, is rather too broad for full acceptance, for this reason: it is not good business to operate a by-pass mechanism where it is essential to save water; and in many of the plants in California it is important that all the water be passed at any rate through the plant itself or around some overflow provided for the water, and, consequently, there are

not many installations where the saving of water at the wheel is of vital importance. But where the water cost heavily for applying to a wheel for generating power, it then, naturally, and as a purely business proposition, it becomes essential to try and govern that wheel with the use of just as little water as possible, and that was the case at Grass Valley installation, for instance, and it might be, so far as my knowledge goes, the case with other installations with which I am not now acquainted in the state. But there is no question but that in most of the installations in the state it is essential that the full quantity of water be passed because it is used below, and, consequently, by-passes came into use readily.

Q. 235. In other words, by-passes have been found to have incidental advantages, such as you have mentioned for by-passing the water around the wheel, such as for irrigation and like uses? Is that not correct?

A. Only incidentally. You don't quite get my idea. My idea is that, given a certain supply of water at the head of the penstock which it is necessary to deliver at the lower end of the tail-race, then it is immaterial, so far as rights below the tail-race are concerned, how that water reaches them, and it may be immaterial to the power plant located between the entrance to the penstock and the outlet of the tail-race as to how he handles that water between those two points. And if he can handle it in such a way by the use of by-passes as to regulate his wheels and get his power, well and good. But if he prefers to let some of this water provided at the head of the penstock to flow through any other channels to the foot of the tail-race, it is just as well, too.

Q. 236. What I mean is, that water passing the by-pass is conveniently utilized in many ways, is it not, particularly in countries where irrigation is carried on like it is in California?

A. It might or might not be. It is not material to the power plant after it goes away from it.

Q. 237. I mean it is material to the question of conservation in the use of water and using it for all such purposes as may be present in a locality?

A. Not at all in the question that I have just answered, for the reason that as I just answered all the water taken out or supplied to the upper end of the penstock must be delivered to the lower end of the tail-race in such cases, and the power plant has no real effect on the prior or later use of the water.

Q. 238. When water-rights below the point of installation are to be considered, the saving of water is a material feature, is it not?

A. No, sir; that is the time when the power plants below have no control. You save your water when the people below you cannot demand it of you. That is when you save it.

Q. 239. I am assuming possibly the use of water at several stages and the water rights attaching to those stages. It then becomes important that the water be so conserved?

A. You say you can assume all manner of conditions surrounding such a power house. One power house may have to conserve the water for certain purposes and another may have to let it go by so another man can use it, but the whole thing revolves around the point that

I have just mentioned. It is immaterial to the power plant man what was done with the water before it enters his penstock or what was done with it after it left his tail-race.

Q. 240. Now, another type of control of water-wheel nozzle has come into considerable use, known as the deflecting nozzle, has it not?

A. No, sir; I think that is going out of use.

Q. 241. What do you think is superseding it?

A. Various other means. I will say that I don't deny but what your assertion may be true, but to my knowledge I have not seen any operated in recent years. But various other devices for producing the same result, which result was a constant flow of water regardless of the quantity used on the wheel.

Q. 242. Such, for instance, as the combined governor of water-gate and by-pass?

A. The deflecting nozzle actually performed that function for the water-gate and by-pass in really a better manner than it had been done in many respects by some forms of water-gate and by-pass.

Q. 243. The deflecting nozzle cannot be used with a turbine wheel, can it?

A. No. That is why it was that the Lombard governor, to which you called my attention here a few moments ago, was the result of efforts to govern in its original forms, and it was intended for the governing of turbine water-wheels. Its application to tangential wheels has been of a more recent date. But, as I said before, I have not had under my own control a Lombard governor where I had an opportunity to monkey with it.

Q. 244. But you have seen them in operation?

A. Yes; but not where I could get my fingers on them and do as I had a mind to. I think, so far as my knowledge goes, they are considered a satisfactory governor.

Q. 245. And I would understand from you then that other types of water-wheel controls, such as gates and by-passes, have laterally come into greater use than that of the deflecting nozzle referred to?

A. I don't know all the recent installations put in water-wheel plants, and I cannot answer that question correctly, I presume.

Q. 246. Well, from your own observation, which have you seen more frequently?

A. From my own observation I have not seen a water-wheel controlled only by a deflecting nozzle in twenty years. I don't think I have seen one controlled solely by deflecting nozzles in twenty years.

Q. 247. And in the use of deflecting nozzles any water not striking the buckets of the wheels is entirely wasted, as far as the operation of the plant is concerned, is it not?

A. Oh, sure. It passes below into the tail-race. There is just the same waste exactly as if it went through a by-pass valve.

Q. 248. Now, assuming that in the use of apparatus generally like that of the Lyndon patent, the by-pass were normally closed, that is, returned slowly to normal closed position after the governing action, there would be no waste of water to the by-pass other than during the period of governing action, would there?

A. As I understand your question, there would not be any waste except during governing action.

Q. 249. And that would establish the marked advantage in saving of water over the use of a deflecting nozzle, would it not?

A. Not necessarily. It would in case the man using a deflecting nozzle had to pay so much an inch for his water, but that does not apply except as I before stated, only in certain cases. There are cases where the use of a deflecting nozzle for handling the water-wheel is prohibitive on account of the cost of the water.

Q. 250. I am assuming that the water has a money value per miner's inch. That saving would be material, wouldn't it?

A. Wherever the use of the water costs so much per miner's inch, passing out of the tail-race of the water-wheel installation, then that device used in the installation which causes the greatest quantity of water to do useful work upon a water-wheel has the advantage.

Q. 251. And that conservation of valuable water would occur in the use of the Lyndon patent disclosure with the by-pass normally set at closed position as just instanced?

A. Assuming as you have instanced, that the by-pass of the Lyndon patent is closed at all times when the speed of the wheel or its load does not need regulation, then such a condition contributes to the economy in the use of the water.

Q. 252. And there would be a proportionate saving of water, would there not, with the by-pass valve of the

Lyndon apparatus at any point normally between full open position and full closed position?

A. I say no to that question, because I believe that the measure of water discharged by the by-pass must be proportionate to the variation in speed or load which affected the wheel, and caused the by-pass to come into operation at all, and change its position at all from full closed as stated.

Q. 253. I am assuming now various positions of the by-pass which are normal positions.

A. You did not state anything to me but full closed. Now, if you are going to have a half a dozen other normal positions, you must state them.

Q. 254. I am asking you if there would not be a saving related to normal position of the by-pass, with the by-pass normally standing at the several positions between fully closed and fully open?

A. Without further study I would think there would be a partial saving just the same as there would be a partial saving by similar operation of the nozzles in the Lamb patent.

Q. 255. In the Lamb patent device there is no normal position of the valve 9 of the brake-nozzle 8, is there?

A. I could assume any position of that valve 9 of nozzle 8 to be normal just as you could assume any position of the by-pass 48 in the Lyndon patent, and in making my reply I would assume such a consideration to be the case.

Q. 256. But that valve 9 of the brake-nozzle 8 of the Lamb patent does not occupy that normal position

or return to it independently of the valve 9 of the power-nozzle 7, does it?

A. It does not.

April 9, 1914. A. M.

CROSS-EXAMINATION (resumed).

By Mr. Blakeslee
QJ

257. Referring again briefly to Defendant's Exhibit Lamb Patent, please state to me what is your understanding of the operation under control of the governor of the part suggested by the dotted lines 30 in Figure 4, of the part 24 which I believe you have referred to as a floating lever.

A. Reading from the drawing shown at Figure 4 of the Lamb patent in connection with the parts of the specifications from line 41 on page 2 of the specifications, the dotted lines 30 represent any form of governing device to operate as a governor by the change of speed, which is driven, as indicated by the dotted line, by a belt from the water-wheel shaft 3; the ordinary fly-ball type of governors act to move a rod contained therein vertically, and said rod is represented in the drawing by the rod 25. Rod 25 operates to raise or lower lever 24 which, in turn, by the links 23 is connected to the levers 20, and by suitable connections 21, 22 and 21, operate the valve-stems 12 in such manner that any motion of rod 25 upward or downward will give motion to the valves 9 controlling nozzles 7 and 8 as shown in Figure 1 to cause the supply of or cutting off of the water for driving the water-wheel and the cutting off

or supply of water for retarding the water-wheel, the object being to thereby regulate the speed of the water-wheel.

Q. 258. As the bar or part 24 is only supported by the rod 25, and is pivotally connected with both links 23 and both levers 20, it is possible for one of the valves 9, say in the nozzle 7, to remain stationary while the other valve 9, say in the nozzle 8, moves; is it not?

A. As shown and constructed in the drawing it is possible for one valve to stick and the other valve to do all the moving. But as the specific operation of these levers is no part of the claim, they need not be followed in the construction of the wheel under this patent to operate nozzles to produce the results called for in this patent.

Mr. Blakeslee: We will have to ask that the last sentence of the answer be stricken out as not responsive.

Q. 259. My question, Mr. Cobb, was merely as to the possibility of action of the parts specifically referred to. Now, let it be assumed that one of the valves 9, being jammed or frictionally held, as by its gland 13, or the packing under the same, we will say the valve 9 in the nozzle 7, would it not be possible, referring to the construction shown in the drawings of the Lamb Patent, for the other valve 9, in the nozzle 8, to move?

A. Yes, sir. But I wish to say in connection with that that the construction shown in Figure 4 and just referred to is in no way claimed in, for instance, Claim 1 of the patent. They could use under Claim 1 of the patent any connection they saw fit between governor 30 and valve-stems 12. Without any reference to that

shown, the drawing in evidence shows the theoretical method of operating it. Practically it would act as in my answer as one valve might stick and another might operate.

Q. 260. Of course, Mr. Cobb, the interpretation of this patent is for the court, and what I am aiming to determine is whether or not these results might not occur from the construction shown in the drawings and disclosed in the specifications. As to that, there is the possibility of one of such valves 9 remaining stationary while the other operates, is there not?

A. That is true, if the mechanism were constructed exactly as shown in the drawing.

Mr. Westall: Counsel for the defendant simply suggests that while the interpretation of the patent is for the court, the questions are going to the theory of operations, and the witness has answered qualifying his answers, in order to make his meaning clear. Counsel cannot insist upon having an interpretation, accepting the interpretation of the witness which seems to support his case and rejecting everything that might possibly militate against him.

Mr. Blakeslee: If counsel had followed the question carefully he would necessarily be aware that my questions were directed at the specific construction disclosed in the patent drawings and specification, and this is not the place to argue the matter.

Mr. Westall: Counsel has followed the question very carefully and submits that the answer of the witness is entirely responsive, and those parts objected to were no more an interpretation of the patent than those

parts of the answer not objected to and not moved to be stricken out.

Mr. Blakeslee: Counsel should leave those matters to the court, which we do confidently.

Q. 261. Now, Mr. Cobb, if during an attempted governing action of the device disclosed by the apparatus disclosed by the Lamb patent, the load upon the wheel should be decreased and the valve 9 in the nozzle 7 should become jammed, the valve 9 in the nozzle 8 should open wider, responsive to the governing action, or, vice versa, as to the conditions and operations of the valves, would not the pressure conditions in the penstock, which you have testified to as being approximately balanced or even, become disturbed?

A. Yes, sir.

Q. 262. And under those conditions would not water-ram probably occur?

A. To produce perceptible water-ram considerable change would be required. But, theoretically, ram would occur.

Q. 263. And, whether or not theoretically, it would occur, would it not?

A. It depends on how much you move the valve.

Q. 264. In other words, it would be a question of degree?

A. That is why I used the expression "theoretically."

Q. 265. And in view of the percentage of load variation which it is specified in lines 66 to 70 of page 1 of the Lamb patent, are provided for in the specific provisions for nozzles shown in the drawing of the Lamb patent, this ram might be such a ram as would be ac-

companying at least a 15% load variation, calculated upon your previous testimony, might it not?

A. It might, particularly if the load was very suddenly changed. If the load were changed slowly, that would greatly modify the force or energy developed in the ram-action of the water and might prevent it altogether.

Q. 266. But if the governing action was so responsive as to reasonably soon correct the conditions of change in load, that ram might be expected to occur, might it not?

A. If the governing mechanism moved with desirable rapidity and strictly in accordance with the conditions which would set about such governing, it would probably produce perceptible ram in the penstock.

Q. 267. Taking up the North Star or Grass Valley installation, which you have testified about, coming to the year designated in your testimony as 1898, as I remember it, will you state, please, how far your alterations went with respect to the installation which you have located in the year 1896 at that plant?

A. The nearest that I can remember without looking up specific data with respect to the installation of 1896 and the alterations on the 1896 installations made in 1898, consisted of supplying a new water-wheel governor and the device inserted between the air-chamber at that time already in place on the penstock and the penstock itself, which device has heretofore been referred to as "Defendant's Exhibit Cobb Pressure-regulating Device Circular." Referring to Defendant's Exhibit Blueprint Nozzle and Governor for North Star Mine, the parts

shown on this blueprint which are similar in construction to the parts supplied to the 1896 installation for governing the water-wheel were the governing mechanism shown at C, with its balanced valve F and levers E, connecting-rods I and K and rocker-arm J, and pipe connections also for connecting same to hydraulic cylinder D, and water-gate B. And they were not constructed, in so far as the lengths of certain rods are concerned nor as regards the position of those rods, as shown on this blueprint. But the rods I have named by letters had corresponding rods answering the same purpose in the installation. The blueprint now being referred to shows the construction of the governor and nozzles and hydraulic cylinder, etc., as applied to a small 5-foot diameter water-wheel which was installed at the same time as the 1898 installation, and refers specifically to that particular wheel installation of 1898.

Q. 268. Then this blueprint, namely, "Defendant's Exhibit Nozzle and Governor for North Star Mines, Grass Valley, California, September 3, 1898, sheet 27" is not a blueprint of the working drawings which were specifically prepared for the North Star installation of 1898?

A. Yes; they are.

Q. 269. This blueprint is from a tracing made for the plans of that particular plant and no other, is it?

A. This is the blueprint from which the work was actually constructed in the installation of the 5-foot wheel in 1898.

Q. 270. And where was that located?

A. In the same power house at the North Star Mine

with the other wheels that have been mentioned in connection with the North Star general lay-out.

Q. 271. And all those wheels have the same governing device?

A. In 1898 this same governing device was applied to two wheels that were being installed in 1898 as an addition to the installation that had been previously put in there about 1896, and I believe I can show it to be true that upon the order of the owners a similar governing device as had been designed for the two wheels installed in 1898 was ordered at the same time to be installed to control the wheel that had been previously put there in 1896.

Q. 272. Then the controlling means of the wheel as installed in 1896 were not found satisfactory?

A. I infer that. I do not remember definitely the construction of the governing mechanism put there in 1896. I have a very vague idea of it. It was not supplied through my office and I had nothing personally to do with that installation except that I had supplied the wheel itself which went on the compressor shaft, and I supervised the erection of that wheel, and the buckets of the wheel; and I believe, as far as I remember, the governing device was supplied by the Pelton Water Wheel Company and the air compressor that the wheel was to drive was supplied by Edward A. Rix. But the 1896 installation, my only interest and my only authority extended to the actual water-wheel itself, without any reference to any other details of the general plant.

Q. 273. Now, in this so-called 1898 North Star Mine

installation, there was no by-pass for the penstock or in the penstock, was there?

A. When the wheels put in in 1898 were ready to start, there was also in position in the penstock, to the very best of my memory, the device shown in "Defendant's Exhibit Cobb Pressure-regulating Device Circular," or the device there shown was installed within a day or two of the time that the wheels should start. The exact condition I am not able to say, because the machinery was erected in place as it arrived on the ground. I saw the device represented in Defendant's Exhibit "Cobb Pressure-regulating Device" installed there when we were operating, and the wheels being those that were installed in 1898.

Q. 274. That by-pass, as you call it, was not connected in any way with the governor of this installation of 1898?

A. In no way at all. The conditions were such that it was impossible to devise the proper pressure-regulating mechanism and attach it to the governor of the wheels, for the reasons previously testified to, that the pressure in the penstock at this power plant was caused to vary very heavily at times by the uses of water taken from the same penstock at a distance from this particular power plant.

Q. 275. How was the governor of this 1898 installation operated? That is to say, what was its operative connections to drive it?

A. It was belted from the water-wheel shaft which, incidentally, was also the shaft of the air compressor which was being driven by the water-wheel in two of

the cases, and in the case shown on the blueprint the governor was driven from a similar shaft, but it was the shaft of an electric generator.

Q. 276. Do you know how long this installation of 1898 was used after it was operated?

A. I do not.

Q. 277. Do you know what has become of it?

A. I do not. I never heard from them that it ever was changed or removed or in any way altered.

Q. 278. You don't know that it is in existence to-day, do you?

A. No, sir; I do not.

Q. 279. Now, as to this device that you have installed and which you refer to as being shown or illustrated by "Defendant's Exhibit Cobb Pressure-regulating Device Circular," you were the inventor of that device, were you not?

A. Yes, sir.

Q. 280. And you received a patent for it?

A. Yes, sir.

Q. 281. And the date of this patent was August 3, 1897, as printed below the cut, being part of this exhibit circular.

A. Yes, sir.

Q. 282. Do you know whether any such devices made in accordance with this patented invention are in use today?

A. I do not. I have not seen one of them myself since I moved from San Francisco in 1900.

Q. 283. When did you last design one or specify it

for installation in connection with any water-wheel plants?

A. I never did specify them unless I conferred first with the prospective owners with regard to whether it would do them any good. But the last one I installed I believe was at the Blue Lakes Water Company plant on the Mokelumne River, and it must have been prior to or during the early part of 1898. I believe I can establish that time more specifically by reference to notebooks that I think I have bearing on the subject.

Q. 284. As far as you know, there has been no such device constructed and installed for the last ten or twelve years, has there?

A. No, sir; when I left San Francisco I sold the patent and gave no further attention to it.

Q. 285. Do you know who owns the patent now?

A. No, sir. It will run out next summer, I think.

Q. 286. Whom did you sell it to?

A. The Joshua Hendy Machine Works.

Q. 287. You say there was another pressure-relief device in position on the penstock at the time you applied this device to the 1898 plant?

A. No, sir.

Q. 288. What was that other device that you have referred to?

A. An air-chamber.

Q. 289. And that acted how?

A. It acted to gradually reduce the liability of the frequent water-rams occurring in this penstock damaging the pipe as a whole or the penstock as a whole.

Q. 290. Then was I not correct in saying that there was another pressure-relief device in the penstock?

A. Well, not in the sense that I am thinking of pressure-relief. But it caused any change in pressure to take place slowly. That was the object of the air-chamber.

Q. 291. In other words, it eased up the pressure?

A. It acted as a cushion.

Q. 292. And its action was not sufficiently compensative for such pressures, was it?

A. It took care of the thing exactly and properly as a cushion. But the difficulty with an air-chamber used under such conditions as that was in use, I can briefly explain as follows: Suppose you have a penstock or pipe-line conveying water at a certain velocity, and that this penstock, being supplied with an air-chamber such as the penstock in question had upon it in 1896, and then assume, which is good practice, that that air-chamber were about two-thirds full of air compressed to the same pressure as the water in the penstock. Now, then, if any outside force acted to suddenly retard the flow of water in the penstock the energy in the moving water would compress the air in the air-chamber to a greater pressure than normal and would continue to so compress the air until the moving force were balanced by the pressure of the compressed air. The elasticity of this compressed air would then start a return flow of water in the penstock which would not of necessity be as great as the initial flow, because of the action of the friction, but such return flow would take place; and then a second action of the water to flow toward the air-chamber would take place, and these vibrations of flow would take place

until the whole original energy of the ram in the penstock would be dissolved by friction. All these actions, it will be understood, tended to keep the pressure in the penstock fluctuating. To prevent this action of the air-chamber just described, I introduced the check-valve shown; and when any air was compressed above the normal pressure in the air-chamber, until such time as the pressure were balanced, as heretofore described, for the first ram of water the check-valve would close of its own weight, it being balanced in pressure on both sides, and prevent the excess pressure of air in the air-chamber making any return flow in the penstock, thus obviating the troubles of the continual repetition in decreasing effect of the original ram in the penstock.

Q. 293. But, nevertheless, under these conditions ram was first produced in the penstock, was it not?

A. The cause of the ram always originated in the penstock.

Q. 294. And there was an increased pressure in the penstock producing such ram before any action of either the old device or the device like that illustrated in Defendant's Exhibit "Cobb Pressure Regulating-Device Circular" could act? Is that correct?

A. Correct.

Q. 295. Now, in the use of the by-pass connected up with the water-gate, and the governor mechanically, as in accordance with the disclosures of Complainant's Exhibit Lyndon Patent, the water ram is prevented by the proper action of the by-pass, is it not?

A. That is true, provided the water-gate so connect-

ed and referred to is the only one on the penstock under consideration. That is not the case in Grass Valley.

Q. 296. I am assuming that this inter-related water-gate and by-pass and governor affect the flow of water jointly with respect to the penstock pressure.

Mr. Westall: You are assuming also, are you not, that Lyndon discloses an operative device which will actually produce the results claimed?

Mr. Blakeslee: The previous question states fully the conditions.

A. That would be true if that were the only installation on the penstock leading to it.

Q. 297. Well, wherever you had such a gate and such a by-pass operating jointly to govern the pressure in the penstock, in so far as controlled by and predicated upon the action of such gate and by-pass, would be controlled to prevent water-ram? Is that not correct?

A. That is right, in so far as they might control alone.

Q. 298. To your knowledge is there any plant to-day in operation the construction and inter-relation of the features of which approximates those of the 1898 North Star installation?

A. I never in practice had occasion to improve the conditions of a plant under such conditions of operation as were required at the North Star installation. It was a peculiar and isolated example, so far as I know, of its operating condition, and in my practice I never found such a complicated problem in regulation. My experience, as far as it has gone in the business, goes to show that most power plants have their individual penstocks

for their sole use, and they are not interfered with by other power plants operating off of identically the same penstock, which was the case in the Grass Valley installation. Consequently, their installation throughout must be considered as being designed and adapted solely for the purpose of controlling the conditions as they prevailed at their installation.

Q. 299. Leaving out of question the device which you patented and one of which you installed in connection with this 1898 North Star plant, do you know of any plant today in operation at any place which follows substantially the construction and inter-relation of the features shown by "Defendant's Exhibit Nozzle and Governor for North Star Mines, Grass Valley, California, September 3, 1898, sheet 27", blueprint?

A. I think any plant that controls its nozzle by a hydraulic cylinder and speed governor is similar to the installation made in 1898 at Grass Valley. It can only vary in some minor details.

Q. 300. But I understand from your previous testimony that you have not kept informed as to the natures of water-wheel governor installations since the year 1900? Is that correct?

A. Since the year 1900 I have not designed and installed any water-wheel installations originating in my office, but I know it is a fact that water-wheels are governed by the use of hydraulic cylinders and speed governors operating nozzles, and in that respect they are similar in a general sense to the installation at Grass Valley, which was one of the original installations using those devices. The Grass Valley plant installed in 1898

and used with the 30-foot wheel installed at that time, I mentioned particularly because it was the first one installed at that time onto which the water was turned, was, so far as my knowledge goes, the first practical successful nozzle put into use and tested that was operated by a hydraulic cylinder. I am led to believe that these remarks are true by remarks made to me at the time that the installation was made, conveying that impression. There had been many attempts made up to that time to make a nozzle with a moveable cross-sectional area regulator, and they had been for the main part very difficult to handle and became inoperative. But the particular design shown on these drawings on this blueprint in evidence here did work successfully and was the subject of considerable interest among parties interested in that line of work. The peculiar design of the nozzle itself rendered it practical to operate it and move it by means of a hydraulic cylinder, and it was successful.

Q. 301. But at that time, as far as you know, that is, in 1898, returning devices for controllers on water-wheel governors did not embody such features as the Lombard governor, as exemplified by Complainant's Exhibit W, did they?

A. Oh, yes. The Bakersfield plant was installed at that time and it had the finest so-called returning mechanism that was ever constructed.

Q. 302. I am referring specifically to such features of returning devices as the Lombard device as exemplified by Exhibit W.

Mr. Westall: The question is objected to as very

vague, indefinite and confusing. There are a great many different features and parts to the Lombard governor, and unless the question is made specific the question cannot be intelligently answered. We object also to the begging of the question by calling the Exhibit a "returning device", the manifest intention being to read it upon the claims of the Lyndon patent. Whether it can be called a "returning device" within the meaning of the Lyndon patent is a question for the court.

Mr. Blakeslee: We do not understand that it is within counsel's province to whisper to the witness from time to time, and we register an objection against it.

Mr. Westall: There has been no more whispering to the witness with this witness than there was to the witness Henry during the time of his examination.

Mr. Blakeslee: We deny that and the record does not show any objection to any such alleged procedure. In response to the last statement of counsel, we refer the court to the answer to question 100, being put to the present witness, being on page 545 of the record, in which the witness in referring to Exhibit H states as follows: "At this time I cannot tell whether the letters BB refer to the main operating lever near the arm BB or to the post nearby standing on the rack GG previously mentioned, which operates through lever arms in connection with the dashpot previously mentioned, and shown behind the pulley DD, all of which constitute a returning mechanism." As the witness has referred to the portions of the alleged infringing structures as a returning mechanism, the above question is specifically and directly and unequivocally cross-examination, and

we note this at this time because there will be further questions along this line and we do not wish any false construction to be placed upon the trend of the present cross-examination.

A. At that time the returning devices in use, so far as my knowledge was concerned, consisted of the floating levers heretofore referred to in the Bakersfield installation, and shown in the Exhibits in connection therewith, and the floating lever E on Defendant's Exhibit "Nozzle and Governor for North Star Mine, Grass Valley, California, September 3, 1898, sheet 27". These floating levers referred to acted when the governor acted to bring a balanced line-to-line valve to central position, and that, as far as my knowledge of the Lombard governor goes, is the object of the device Complainant's Exhibit W here shown.

Q. 303. And I believe you have stated that you have never studied and analyzed the operation of the Lombard governor device such as is exemplified in Complainant's Exhibit W. Is that correct?

A. I never have had an opportunity to have a Lombard governor under my control for the purpose of experiment or adjustment to study its operation under certain conditions or operation under any specific conditions.

Q. 304. Referring again to Defendant's Exhibit "Cobb Pressure-regulating Device Circular," I note that therein the phenomena of "ram" are referred to at some length. I take it that at the time when this circular was published these conditions or inertia factors in penstocks were well recognized. Is that not correct?

A. They were certainly recognized in my own practice.

Q. 305. And was it not at that time considered that one of the essential objectionable factors to be dealt with in water-wheel governing, and a factor to be eliminated, if possible, was such ram or shock in the pipe-line?

A. It was a recognized fact and had been for some years that in order to obtain the best regulation of water-wheels it was deemed to be absolutely necessary that the greatest possible uniformity of pressure be maintained in the penstock, and it is my memory of the matter that many concerns interested in the installation of water-wheel power plants were working along these lines of so controlling water-wheels or so designing the elements of the power plants that the water in the penstock should be subject to the slightest possible variation of pressure. The Risdon Iron Works had constructed devices that maintained constant flow in the penstock when governing the speed of wheels for changes of load; the S. N. Knight Company I know were working on the same general scheme, and I believe had produced practical results; the Pelton Water Wheel Company were giving attention to the same subject; the Girard Water Wheel Company were working on the same subject; and I had done what I could on the same subject in connection with the Grass Valley installation at that time to make their particular installation, which, as I have previously testified, was a particularly exaggerated case, as near correct to an accepted standard as possible. It was also within my knowledge at that time—and by “that time” I mean along in the years from

'95 to '98—that foreign corporations were working to produce similar results.

Q. 306. As I understand you, Mr. Cobb, no part of the installation for the North Star plant at Grass Valley, of either 1896 or 1898, is at present in existence or operates, as far as you personally know.

A. Personally I have not been at the plant since the fall of 1898.

Q. 307. When did you last hear anything about any of the features of this installation?

A. Well, a year or two later I heard that certain spokes in one of the water-wheels had broken and the material was found to be defective, and that they replaced the spokes with larger steel. But I never have heard a word about any of the nozzles or governing devices or any other features than what I have mentioned, as being disturbed or not disturbed. I have not heard anything in any way whatever about it since I came to Los Angeles in 1900. If I have, it has escaped my mind. But I don't think I have heard anything at all since then.

Q. 308. And you have no record of any nature of anything which has transpired in connection with that plant since 1900?

A. Not at all.

Q. 309. Referring to Defendant's Exhibit "French Patent" and Defendant's Exhibit "Translation of French Patent," have you ever seen any installation embodying the construction and inter-relation of the features disclosed in these exhibits?

A. I have seen installations having parts of the exhibits disclosed, but never have seen an installation that

contained each and every part shown on the drawing accompanying the French patent.

Q. 310. To try to connect this correctly on the record, I will ask you if you have ever seen any installation which you would say was a fair embodiment of the complete mechanism disclosed in these exhibits, and I am not now referring to such details as a particular centering of a lever or a particular size of a port or particular amount of play of any part.

A. I never have seen any plant or installation employing the devices indicated in the French patent exactly as there shown, but I have seen plants having many of the operative elements shown here, such as the hydraulic cylinder with its operating valve, the floating lever u, the fly-ball speed governor shown at the left hand of the floating lever u, the piston v, of the hydraulic cylinder controlling the water-gates. I have seen installations having the by-pass c controlled by the hydraulic cylinder r through the motion of its piston v and proper connecting levers or linkages.

Q. 311. Have you ever seen any installation containing all of the essential parts of these exhibits?

A. Yes.

Q. 312. Did such installation include the levers u and w and j, connected as they are disclosed to be connected in these exhibits, with the rod of the piston s, lever j being likewise connected with rod p and the rod v being likewise connected with the rotating or oscillating part x?

A. I have seen water-gates operated in substantially the same manner.

Q. 313. By the use of these parts I have designated, connected as I have designated?

A. I have seen water-wheel gates operated by connection to the piston in the hydraulic cylinder r, the piston rod v of hydraulic cylinder r operating the by-pass valve. I have seen the floating lever uu whose motion at one end was controlled by the speed element in the governing mechanism and whose central point of connection controls the position of a valve controlling the supply for operating pressure to the hydraulic cylinder r, and which floating lever also had connection with the piston rod v of the hydraulic cylinder r.

Q. 314. I will again ask you if you have ever seen all of the parts I have mentioned in the last preceding question connected together as mentioned in that question in any one installation?

A. Never as exactly there constructed.

Q. 315. You have stated in testifying in relation to the "Defendant's Exhibit Swiss Patent" that there are some rather hazy features shown therein. Are you in a position to positively state the exact operation and sequence of operation of this device, and parts thereof?

Mr. Westall: Objected to as not correctly stating what the witness has previously testified to.

Mr. Blakeslee: The record speaks for itself.

A. I understand the operation of the mechanism shown in the Swiss Patent sufficiently to understand that the gates for the water-wheel operate in conjunction with the gate for the by-pass from the penstock. The only reason that I know of that I could not right off hand describe every particular motion in this device was the

lack of opportunity to study out exactly the motions that are indicated by some of the smaller figures, as at Figure 4 and Figure 5, which I no doubt could readily clarify by taking time to study same, which have to do with the motion of the piston k enclosed within the piston f. But the proportions of the drawing shown are such that for any long motion of the piston f there must be also some motion of the piston k. But the construction is such here that the piston f may move faster or farther than the piston k in either direction, which relative motion, as I stated in my previous testimony, was affected or constrained or perhaps augmented by the specific positions of the parts shown in Figures 3, 4 and 5, which conditions of motion are exceedingly hard to explain from a drawing alone, because of the relative positions of many of the parts which any one part moves. That is what was troubling me at the time that I testified here before in reference to this patent exhibited. The features shown in this patent are readily observable—that there is a gate to supply the supply of water to the water-wheel and that there is a gate to allow the escape of water at the by-pass, between the penstock and the water-wheel gate, both of which are operated by a hydraulic cylinder, which, in turn, is acted upon by a speed-governor.

Q. 316. What do you glean from Defendant's Exhibit Translation of Swiss Patent'' as to any of the features with which you have difficulty in definitely stating the operations?

A. As I have previously testified, it has been lack of time on my part to study closely the translation of the

Swiss patent. I had only opportunity before coming here last week to read it over twice, and I have not got it all memorized or at all memorized. And at this time I am testifying strictly from an inspection of the drawing before me.

Q. 317. I note that this translation refers to the part d as a "tongue." What do you consider the part d to be?

A. The part d is a gate for opening or closing the passage for water from the penstock to the water-wheel, and such design of gate hung or suspended from one end and rotating about an end fixed against motion in any other direction, as if it is called a tongue-valve. That is simply a technical name known in some localities quite commonly. In other localities it might be called a swinging-gate. But that is simply a name as it may occur to an individual acquainted in any particular locality. It moves like a tongue in your mouth.

Q. 318. What do you understand the translation to refer to by the term "servomotor" in the purported translation of Claim 1?

A. I recognize that, as I read it, as a governor, and the regulating valve he refers to for the servomotor is a valve within the case n. The servomotor is the governor m shown on the drawing, and the valve operated by the servomotor is within the case n.

Q. 319. This claim refers to a governor and also to a servomotor. How would you distinguish within the translation of this claim?

A. I now find that word "governor" in the fourth line of the third paragraph of the first claim, and I re-

gard the word "governor" as used there and also in the eighth line in the same paragraph as being identically the same piece of mechanism referred to in the sixth line of the second paragraph of Claim 1 by the word "servomotor." I regard it now as I did before in reading these claims that the translator may have learned between the translation of the first paragraph and that of the last paragraph a better word or a more commonly understood word in our ordinary English, for indicating the same piece of mechanism or describing the same piece of mechanism.

Q. 320. Then which part do you consider the translator means to be understood as the servomotor?

A. The governor m.

Q. 321. Have you ever heard this term "servomotor" used in the art of water-wheel governing?

A. Not previous to this case.

Q. 322. Would you take it then that the translator of this purported translation, "Defendant's Exhibit Translation of Swiss Patent," was familiar with the terminology used by English-speaking people in mechanical matters?

A. In answer to your question I should say that the translator recognized the fact that he was using English terms instead of American, and changed his language, as indicated by the change which he made after translating paragraph 2 of Claim 1 and before he had completed the translation of paragraph 3 of Claim 1, because of the fact that in paragraph 3 of Claim 1 he uses a word for indicating the same piece of mechanism that is commonly understood in America in mechanical matters.

Q. 323. And that word is what?

A. "Governor."

Q. 324. In paragraph 3?

A. Yes, sir. It occurs twice in paragraph 3, and in the proper sense.

Q. 325. Whereas in Claim 1 he uses both the term "governor" and "servomotor", and in that respect is confusing?

A. I don't see the word "governor" in paragraph 1 at all.

Q. 326. Claim 1.

A. Oh, yes. He does use the word "governor" in paragraph 1, and it would certainly appear to me to be an oversight that he used the word "servomotor" at all. Perhaps he did it to prevent repetition. I see that in that paragraph both words are used. But he means the same piece of mechanism by both words. There is no doubt about it. The translator, as I recognize him, was a foreign man and likely to make that error, from my observation.

Q. 327. In other words, this is the kind of a translation which you would expect of a man born and educated in Europe, rather than in this country or England?

A. I would expect a man foreign born to introduce foreign words with greater facility than an American born man would.

Q. 328. Then he fell into the error also, in paragraph 1, Claim 1, I take it, by speaking of something being operated by itself, did he not, when he spoke of the "governor" being operated by a "servomotor"?

A. My reading of that was this: that in his mind, as it is proper to consider it, the whole mechanism—you can readily understand it yourself—that the whole mechanism which he is pleased to term “governor” or “servomotor” m clear to the gate d is a governor in the broad sense. And one of the elements of that complete governor is what he terms the servomotor m. Also one of the elements of the complete governor is what we would term in this country a governor m. We would use the language ourselves in just the same way, and yet the whole mechanism included the hydraulic cylinder, the springs and pistons and all, and is taken, as a whole, as a governor.

Q. 329. Then the mechanism that he refers to in the same paragraph for automatic regulation must also be the governor and also be the servomotor, according to his translation?

A. In that first paragraph, in reading that, one would translate that word or, at least, I would translate that word “servomotor” to mean that part of the mechanism which transmitted the moving force, and in that first paragraph is the hydraulic cylinder. It is the element producing the moving force. In the same sense, when he gets down to line 6 in paragraph 2 where he says “the water through the regulating valve of the servomotor”, he refers to the same hydraulic cylinder containing the piston f and the regulating valve referred to is the valve within the case n. Now then, in line 4 of paragraph 3 of Claim 1 he says: “produced by the regulating valve as a result of speed increase of the governor m. And in the same paragraph at line 7, quot-

*governor.
case n*

ing from the claim, "a slowing down of the rotation of the governor", and he certainly refers to what we call the governor represented at m, and that makes the connection clear.

Q. 330. Then you think that governor just referred to in paragraph 3 of Claim 1 is the same governor referred to in paragraph 1 of Claim 1?

A. Yes; there is no doubt about it in my mind.

Q. 331. Then you would not wish to definitely follow this translation in authoritatively and finally stating the mode of operation and inter-relation of parts shown in the drawings of "Defendant's Exhibit Swiss Patent", would you?

A. If I were going to use this translation to assist me in constructing a mechanism as shown by the Swiss patent, I would use my common sense in relation to such construction in connection therewith.

Q. 332. In other words, the personal equation^t would enter into your use of it?

A. My experience with translations has been such that I have usually found that it is difficult to translate from one language to another idiomatic expressions so that they sound right in the ordinary language of our own country.

Q. 333. And that, of course, depends, I suppose, more particularly upon the familiarity of the translator with the language of both countries?

A. I have had in my employ before now a Swiss educated gentleman of Polish parentage who has been practicing theoretical engineering in the state of California for thirty years, I presume, or at least twenty-five to my

knowledge, who maintains that the making of a mechanical literal translation is impossible; and when he has been called upon to make translation of foreign documents he reads them until he understands them perfectly and then writes them so that an American can understand them and submits it as a translation, and he does not attempt to translate them literally.

Q. 334. But where the original text to be translated accompanies a drawing, as in the present instance, and that drawing shows, for instance, a fly-ball governor, there would be no sense in attempting to tell an English-speaking person that it was anything but a fly-ball governor in order to follow any idiomatic language of the foreign author, would there?

A. I wouldn't think so. It looks like a fly-ball governor to any American all the time.

Q. 335. Have you to the present moment given any particular study to "Defendant's Exhibit Translation of French Patent"?

A. Not closely in relation to its specific use of words. I read it over two or three times, over a week ago.

Q. 336. That is, the translation?

A. Yes, sir.

Q. 337. Was your discussion of the construction and mode of operation of "Defendant's Exhibit French Patent" based upon your understanding of this "Defendant's Exhibit Translation of French Patent"?

A. No, sir; I read the operation of the French patent from the drawing when I was testifying before, and I read it as completely as one could when the parts in the drawing will not move according to the statements. By

that I mean we say what will take place when a certain piston moves. A drawing does not move, while in our statements the piston does move, and we have to make it as clear as we can under those circumstances.

Q. 338. Have you ever seen a water-wheel governor installation which has involved in its construction and inter-relation of parts all of the essential features disclosed by Defendant's Exhibit Swiss Patent in the same general inter-relation of the parts?

A. From my interpretation of your question, yes.

Q. 339. Without specifying details of parts, did such installation have the various parts arranged as shown in "Defendant's Exhibit Swiss Patent" and connected up in the same manner and operating as to sequences in the same relation?

A. Yes, sir.

Q. 340. Were all the features of Figure 4 of the Swiss patent in that translation?

A. No, sir; I was talking only about essentials and not about details. There are a great many details that were not in any installation that I ever saw.

Mr. Fletcher April 9th, 1914, P. M.

Q. 341. Referring again to "Defendant's Exhibit Nozzle and Governor for North Star Mines, Grass Valley, California, September 3, 1898, sheet 27", being the blueprint, will you state briefly, as far as you can recollect, what the governing means was in the 1896 installation at this point in lieu of what is shown in this blueprint?

A. As I remember the 1896 governing installation, it included a fly-ball governor operating by means of a

hydraulic cylinder, the motions of which were controlled by said fly-ball governor, which, in turn, operated to control the water discharged by the nozzle upon the water-wheel.

Q. 342. And the installation of the construction and inter-relation of features shown in this exhibit blueprint, including the leading features which you have designated in large red letters on this sheet, was put into this plant some time after, in the summer of 1898?

A. The installation was begun in the summer of 1898 of the machinery shown on the blueprint drawing referred to, and the installation was continued along through the fall of 1898.

Q. 343. And it was not completed until before the end of 1898?

A. Approximately the end or latter part of 1898.

Q. 344. Could you locate the final completion of this installation by any month at the latter end of 1898?

A. Well, I never have been at the plant since about the first of January, 1899, and the plant at that time was all assembled and parts of it had been in operation. The mechanism shown on this blueprint had been tested out and operated and the parts operating the 30-foot wheel had been operated and the plant was prior to January 1, I think, in a proper condition to have compressed air and otherwise operated for the purpose for which it was installed.

Q. 345. Then you would fix January, 1899, as about the time of the final completion of this plant?

A. I believe that to be true; yes, sir. I remember that one of the elements delaying the completion of that

plant was the arrival of the parts of the generator, and the 5-foot wheel shown on this blueprint was the last portion of the plant installed. The 30-foot wheel forming another section of the same installation was put in much earlier in the fall and was in operating condition some months earlier than the 5-foot wheel.

Q. 346. Referring now to the so-called Power Development Company plant which you have located as having been installed at the foot of Kern River Canyon some 15 miles from Bakersfield, California, it was your belief at the time you rendered the report made in August, 1896, being Defendant's Exhibit Cobb & Hesselmeier's report, August 8, 1896, that the general specifications therein advocated would be a satisfactory means of accomplishing the ends in view? Is that correct?

A. Advocated by whom?

Q. 347. Advocated, as follows the wording,—
“Girard proposition”.

A. The Giard Water Wheel Company, I suppose you mean?

Q. 348. Yes, sir; the Girard Water Wheel Company. (The question is read. No. 346.)

A. No, sir; for this reason: there are three specifications described in that report, and I don't know which one the attorney refers to in his question.

Q. 349. You state as follows toward the end of your report: “We are of the opinion that the proposal which most nearly fulfills these requirements and many other desirable features of less importance is that presented by the Girard Water Wheel Company.”

A. That is correct.

Q. 350. Were you satisfied that their proposal would produce the required results in a plant of this type?

A. Yes, sir; I was satisfied with the proposal made by the Girard Water Wheel Company as set forth in that report.

Q. 351. And did the construction which entered into that plant substantially follow the proposal of this company?

A. It did.

Q. 352. And was it your conclusion after inspecting this plant that the results came up to your expectations at the time you rendered this report?

A. At the time the plant was submitted to test all the results anticipated by the text of that report were fulfilled with the exception of the efficiency of the water-wheels themselves.

Q. 353. Now, what date would you fix as the date of completion of this installation of the Power Development Company?

A. It was some time—I think some months prior to the time it was tested and reported on, and I reported in August, 1897, as shown by the exhibit on file here, which is a copy of the report referred to.

Q. 354. The date of that report appears to be August 24, 1897.

A. I don't remember it without looking at the text of it myself, but I know it was in August, 1897.

Q. 355. And this report was rendered substantially, or, at least, approximately at the time of the completion and after a short period of running of this plant?

A. No, sir; it was not. We worked there testing that plant on many different occasions, and for a long time at one time. I think we stayed with that plant one time for thirty days. There was quite a bunch of men, because we had a new construction to deal with and conditions new to some of us, particularly with regard to the wheels, and we were endeavoring to determine all points in relation to it with the greatest care, and the generator people were interested in the uniformity of speed and the Girard Company were trying to demonstrate that their wheels gave a greater efficiency than the test seemed to demonstrate, and there was a good deal of backing and filling as to who was responsible for the apparent shortage of load, and we finally, after a long time and convincing tests, came to the conclusion there was no doubt whatever but what the real fault lay and was entirely in the efficiency of the water-wheels. It is possible, although I can't be at all certain of it, that closer dates could be discovered than I have mentioned for the time when that was ready for water to be turned there, but I don't think I have the data that was given.

Q. 356. Were all these tests and other steps taken before you rendered this report of August, 1897?

A. August 1897 is the report of the test, isn't it?

Q. 357. "Efficiency Report."

A. All the tests I had anything to do with were made before that time, of course.

Q. 358. Including this 30-day test?

A. I can't say there was a 30-day test, but there was a long time. All I had to do with the Bakersfield plant was prior to this report.

Q. 359. Can you state definitely when you obtained the photographs in evidence, being marked "Defendant's Exhibits ZZ and XX"?

A. Those two exhibits are reproductions of photographic illustrations which must have been taken—the photographs were taken prior to the final testing of the water-wheel.

Q. 360. And where are those original photographs?

A. You have one of them on file here that I have in mind, marked "Interior of Power Development Company Power House". That was taken prior to any test work on the installation.

Q. 361. I mean the originals of these exact reproductions, being Exhibits XX and ZZ?

A. Referring to Exhibits XX and ZZ, these particular exhibits were photographs taken from a publication issued on September 7, 1897, or in September, anyway, 1897.

Q. 362. You mean these are photographic reproductions of others?

A. Yes, sir; these particular exhibits are.

Q. 363. Who made those photographic reproductions?

A. Pierce & Company, Los Angeles.

Q. 364. Have you available the originals of those reproductions?

A. I don't own the original volumes that they were produced from. I borrowed them from other parties and had these photographs taken.

Mr. Blakeslee: In view of the testimony of the witness, we must renew our motion to have stricken from consid-

eration the testimony concerning these Exhibits XX and ZZ, and renew our objection to these photographic reproductions as not being the best evidence and no sufficient foundation laid for the introduction of secondary evidence, and, therefore, that they are incompetent, irrelevant and immaterial.

Mr. Westall: The exhibits referred to in the last objection of counsel were simply introduced in the same manner that a drawing or chart or other representation might have been introduced, made by the witness on the stand, to make more clear his testimony. Owing to the inadequacy of words always to express ideas, these photographs are introduced only to aid in a more full description by the witness of the devices which were in use at the time and place inquired about.

Mr. Blakeslee: Then counsel understands that these exhibits XX and ZZ are not relied upon in themselves as being evidence of the things purported to be represented therein, or of the dates or times at which any of such things were in existence, or of the dates or times at which the purported original photographs of such things which may have been in existence were taken, but merely as auxiliary to the testimony of this witness?

Mr. Westall: I think in general counsel is correct, their only object being to make more clear the oral presentation of the evidence.

Q. 365. By Mr. Blakeslee: Now, referring to "Defendant's Exhibit Interior of Power Development Company's Power House", can you state definitely when you obtained this photograph or came into its possession?

A. I came into possession of that photograph about the time it was taken and was ready for delivery, in the summer of 1898.

Q. 366. You did not see the photograph taken?

A. I testified the other day that I did not, but I really have changed my mind^d since, and I am inclined to think that I snapped the camera that took it.

Q. 367. And developed the picture?

A. No, sir; I had nothing to do with the developing or printing. My reason for making that statement is this: that I have been thinking of this many times since this testimony was started to be taken, and it seems to me that this same photograph, with all the individuals in it, with one exception, was taken, and that is where I sat down on the generator in place of Mr. McMurdo, as shown in the exhibit, and he went and snapped the camera taking me in the position. Mr. Berry in the other photograph is standing instead of sitting at the water-wheel, and in the other photograph Mr. Smalley, who is lying down in the photograph on the floor, is standing behind the penstock.

Q. 368. And when was the last time you were at this plant?

A. I have been at the plant since the final time that I was there in connection with the completion of the installation—the Girard installation. When the Girard installation was completed and the report of its efficiency made, then there was a long period of time when the matter stood quiet, I presume by the owners being in discussion as to what they should do, and I went off about other business. I was very busy in all parts of

the country there, and I was there at a later date after some Knight wheels had been introduced into the plant to take the place of the Girards on the water-wheel shafts within the casing shown on the photograph. The exact date of that I do not recall, but I can determine by reference to my records. And I was there at still another date which I do not immediately recall. After the plant had been in use for some years the company concluded to do away with the long flume they had, following the contour of the canyon, and they did conduct a tunnel directly through the mountain; and when they connected that tunnel which had been constructed through the mountain to the penstock of the water-wheels, I was there on a visit of several days. But at that time I did nothing with the water-wheels and don't remember what water-wheels were in use at that time.

Q. 369. Have you any idea of this last time?

A. I don't quite remember. It must have been in '99.

Q. 370. You have not been there since 1900?

A. I can look that up and see. I think maybe the time when I went there, when they connected the tunnel to the penstock, was since I came here. I think I went up from here and stayed two or three days to watch the work while the man who really had it under his charge went away. I guess that was in 1900. There was absolutely nothing to do with the water-wheel. It was simply a connection of the penstock with the tunnel, and I had previously designed for the outlet of that tunnel, automatic gates for — I had designed and installed there gates which would maintain the level of the water in the

penstock automatically, and also designed a gate that was put at the inlet end of the tunnel to be worked electrically from the power house to close off water from the entrance to the tunnel. Sometimes a ground squirrel would go across there and short-circuit the system, and it would close the gate and we would be without water.

Q. 371. I will ask now if you can give the approximate last time by date when you were at this plant?

A. I could not, as I sit here. I think I might be able to approximate it quite closely if I had an opportunity to refer to notebooks, but I am not sure of that until I look at the notebooks.

Q. 372. You are not in a position to state within six months or a year of that last time?

A. No, sir; I am not. I don't recall it. I think it was since I came to Los Angeles in 1900. But the errand I did at the last time I was there had no connection with the plant in any other way except at the connection between the tunnel and the pipe-line running down the side of the mountain. I remember that pretty well.

Q. 373. Would it be as late as 1902 that you were last there.

A. No, sir.

Q. 374. Would you say it would be as late as 1901?

A. I would not attempt to say without looking at my notebooks. I don't think it was as late as 1901.

Q. 375. I note in this report of August 24, 1897, that you state is was found expedient to substitute oil for water in the hydraulic cylinder. When was that change made?

A. We discovered that we were getting so much of this mica achist float in the water that it filled up and clogged up our pipes and water passages and cut the valve-seats very badly, and in that way it made the valves leak. And to overcome that we put in a little oil pump to pump oil into the receiver under pressure to operate the hydraulic cylinder.

Q. 376. That change was made about when?

A. While we were working prior to the test reported. All the work in that test was done before the test was reported.

Q. 377. I notice certain red ink changes made in this report, or alterations. Can you state when those were made?

A. At the time the report was written. I think the report has absolutely not been touched by anybody to my certain knowledge since it was filed away, when I moved from San Francisco in 1900, till it was brought here. Those changes were typographical errors, either by omissions or misspelling. I don't remember what they are, but there could be no object in changing the report in any way except as to errors in typewriting.

Q. 378. I note that this report states on page 5 "The discrepancy shown and the lack of faith of the Girard Co., in the form of buckets which they used in their wheels, led them to change that portion of the wheels which contained the buckets and replace them with those portions now in position." Were those buckets originally used on the improved type, or something that the Girard people were experimenting with in the first installation?

A. The whole Girard installation at that time was new in this country.

Q. 379. In other words, the installation was designed as a novel and original installation of this plant?

A. By that particular firm of Girard people that did that particular job. That was their first installation.

Q. 380. And they had never tested out, to your knowledge, this installation in a companion or equivalent installation previously?

A. Not at all.

Q. 381. If they had done so would it have come within your knowledge at that time?

A. I think so, because they were a new corporation just starting in business.

Q. 382. Is that Girard Company in business at the present time?

A. I think not. I think this installation is the only one that they ever constructed. They hadn't much capital and they got into some trouble among themselves a few years—I believe they did make some other smaller wheels, come to think of it, but no larger installations to my knowledge. They made some smaller wheels, and maybe a lot of them, but no large installations.

Q. 383. And were some of these small wheel installations made after this Bakersfield installation?

A. I think so.

Q. 384. And they did not follow the Bakersfield installation?

A. I can't vouch for that, because they were self-contained units.

Q. 385. As far as you know they did not contain any of the distinctive features of the Bakersfield plant?

A. I would not attempt to say. I have an impression that they built more wheels than the Bakersfield wheels and I might be dead wrong about that.

Q. 386. But as far as you know, they did not contain the distinctive features of the Bakersfield plant?

A. I don't know anything about it at all.

Q. 387. To quote again from this report of August 24, 1897: "The by-pass valves are not reliable and have so far given a great amount of trouble and should be replaced by a construction that will render it possible to operate them with certainty by the hydraulic cylinder provided in part for that purpose." Now, what have you to say as to the kind of trouble the by-pass valve presented?

A. It was a cylindrical valve with a parallelogram opening through it much like an ordinary plug-cock, except that it was a true cylinder instead of being a tapered cylinder, and it fitted its enclosing case very neatly, and this mica, sand, or mica Schist sediment that floated in the water would get in there and bind the valve so tight that it would refuse to move and would grip and bind, and the first time or two it did that we laid the trouble to something else because the parts all happened to be strong enough so that when the valve stood still the hydraulic cylinder would not work, and we didn't know that it was the valve holding tight, and at first we had difficulty in locating the trouble. But we found it was this mica sediment and we had the same trouble with the gates in the water-wheels. The whole mechanism fitted

together so mechanically close that the sand gave us trouble and we had to make the fits less exact, and free them, to make them operate so that the sand would not bind them.

Q. 388. This quotation is from page 18 of the report, and in order that the record may show how this report was originally presented as evidence on behalf of the defendant, I will ask the witness if he will again please give the numbers of the pages which were originally sealed up in presenting this report here, as the record shows.

A. I stated before, when I took this report out to show it to the attorney for the defendant, I ran it over, and my idea was that he wanted a description of the plant at Bakersfield, and I saw that description on those two first pages and enclosed them with a led pencil mark, without reading the report at all and without looking at the contents of the rest of it I closed them off and left the last page in the report which contained the signature, so that the attorney for the defendant would know that there was a signature to the first two pages thereof. And when I closed them off I did not believe there was anything in them that the attorney for the defendant wanted, except that description on the first two pages. That is why I happened to close them off, and I do not now know the contents of the report by reading it in recent years at all. Some of these quotations just made to me by the attorney sound as fresh to me as they do to him.

Q. 389. Then you closed off, or sealed up all the pages of the report except the two first and the last?

A. Yes, sir; and for the reason and in the manner that I have stated, without reading the report at all.

Q. 390. Now, what was done, to your knowledge, to remedy the trouble with these by-pass valves?

A. I remember, without any reference to that report, that the by-pass valve and the water-wheel gate were all loosened in their inclosures. They were brought there fitting too nicely to work with anything except the clearest kind of water. Whatever I stated in that report was absolutely true at the time it was written.

Q. 391. You state as a recommendation in the quoted matter that the by-pass valve should be replaced. Do you know whether such replacement took place?

A. No, but I remember now what that referred to. I thought a gridiron valve would make a much better by-pass valve, and not likely to stick and be held to its seat by the water pressure.

Q. 392. Do you know how long these by-pass valves which you recommended against or complained of in this report were used, after you rendered the report?

A. No, sir.

Q. 393. Do you know that the installation at this plant was modified by substituting Tuthill wheels for Girard wheels?

A. I have understood so, but I also had the impression that Knight put in wheels before Tuthill did. Knight put them in sometime, whether it was before or after Tuthill I don't know. Knight and Tuthill both put them in. The wheel makers of San Francisco and that neighborhood were all anxious to put in wheels in the belief that they could nearer approach the efficiency of wheels

which the Girard people had originally guaranteed, and make a better showing of efficiency than the Girard wheels actually did, and the management of the Power Company was inclined to give these people an opportunity to try their wheels, and how many of them they gave, I don't know. And I have notes in my own notebook concerning the Knight installation, and I don't think I have any notes of the Tuthill. I don't think I went there at all at the time the Tuthill installation was tried out.

Q. 394. But you do know the Girard wheels were thrown out—

A. They were thrown out for lack of efficiency. I know that.

Q. 395. Does it come within your knowledge that when the Tuthill and Knight wheels were put in there was no synchronous operation of the by-pass and the water-gate?

A. It does not. I had no knowledge of any details they changed when they went there.

Q. 396. Don't you take it that the trouble with the by-pass which you determined when in this plant, which by-pass was put in, as you say, with the Girard installation, resulted from the experimental nature of this plant?

A. I think the reason the Girard people fell down on their efficiency was due to the form and general design of the water passages and water-wheel gates after the penstock entered the enclosing case of the water-wheel.

Q. 397. What efficiency did you find the Girard installation gave in this plant approximately?

A. I will have to refer you to the report. I don't remember.

Q. 398. Can you state without reference to the report?

A. I think it was about 70%; I don't remember.

Q. 399. What do you consider is a good efficiency in present day practice, as far as you are informed?

A. I am not up to the present day practice. I won't say anything about present day practice. They claim all sorts of things in the circulars, but what they are doing I don't know.

Q. 400. If the efficiency of that plant had been 80% at that time would you have considered that high?

A. I would have considered their guaranty extraordinarily high in every respect if it was presented.

Q. 401. And if the Girard installation gave that efficiency at the time you made that test which you have referred to, would you consider that the wheels were efficient in operation?

A. I certainly would.

Q. 402. This report further states on page 18: "The oil pumps for keeping up the supply of oil in the surge tank are driven far too fast, they should be reduced in speed to not more than one-half that now maintained. The present high speed causes hammering in the pipes and is too great when the area of valve passages is considered." What explanation can you make for such miscalculation by the Girard people?

A. The original installation did not contemplate the use of oil at all for operating the plant, and it was no part of the original design to supply oil for the opera-

tion of the hydraulic cylinders. But after the plant had been erected and after we had water flowing down the flume and the penstock for some little time, it brought down so much mica schist and floating sand as to interfere, as I have heretofore stated, with the operation of the small valves, and all that sort of thing, and to obviate that we hurriedly purchased such little triplex pumps as we could find in the market and belted it to the water-wheel shaft in a hurried way, and the water-wheel shaft making 250 revolutions per minute, and it drove the pump too fast. But it was all put in in a hurried way so that the test work might go on without waiting for anything in particular, and when that report was made I felt it incumbent on me to mention that fact, so that the owners would not leave it there permanently. That was all there was to that.

Q. 403. I note that the report concludes substantially as follows: "Hence, we recommend that when the above mentioned defects of the by-pass valves and oil pumps be properly made good and reliable and when dynamometers have been so adjusted that they shall measure a maximum transmitted load of 750 H.P., that these water-wheel units be accepted with such deductions as may be mutually agreed upon as a fair allowance to the Power Development Company as compensation for the fact that these wheels do not show exactly the guaranteed efficiencies; or, that the Girard Water Wheel Company be required to replace these wheels with such others as will show the efficiencies required under the contract." Do you know what was done in the final adjusting of accounts between the Power Development

Company and the Girard Company?

A. Nothing whatever.

Q. 404. You mean you know nothing whatever about it?

A. No; I had nothing to do with that part of it whatever.

Q. 405. Did you ever testify for either party in any litigation over this account concerning this plant?

A. To tell you the truth, I don't believe I remember that there was ever any litigation. It don't come to my mind at all right now.

Q. 406. It was your conclusion, was it, as reflected by this final resume of the findings of your report, that the plant as a whole—

A. I remember now all about it.

Q. 407. —was not a proper compliance with the proposal of this Girard concern, and that the plant should not be paid for, at least without proper and material calculation of alterations and subtractions?

A. For the reasons stated in the report that the wheels did not fulfill their guaranty of efficiency, I made the recommendation therein set forth, and the reference therein set forth concerning the by-pass valve operation was a mechanical trouble, as I have explained heretofore. In other words, if I had been designing the wheel myself, instead of the Girard Company,—if I had been designing the installation, I would have had a gridiron by-pass valve instead of a cylindrical one. But I had nothing to do with that part of it, and, consequently, I could only make a talk. I couldn't execute anything. I think they would have escaped a lot of trouble that they

had with the operation of the valve, that is, the moving of it in its case. It was not the fact that it by-passed water that made us trouble, but it was difficult to move within its case. It was strictly a mechanical trouble.

Q. 408. And all these troubles which the report reflects you consider sufficient to warrant a substantial reduction in the consideration which should pass to the Girard concern for this installation? Is that correct?

A. I believe that is correct, because the actual output of power was very much less than they had promised, and still, as I remember it, the owners were anxious if they could to give the Girard people opportunity to make the plant so that they would not have to reject it entirely.

Q. 409. And when you last went to this plant, which, as you say, was not later than 1902, the Girard installation was not there, was it?

A. I don't believe the wheel was there at all. I believe the governor was.

Q. 410. Do you remember whether the by-pass features were there?

A. No; I don't remember.

Q. 411. Are you now able to recollect any piece of litigation which you had anything to do with concerning the settlement of this account between the Power Development Company and the Girard concern?

A. I remember being called up from Los Angeles, here. I can't remember the date of it, but, anyway, I remember testifying in regard to the material that had been originally supplied by the Girard people and was discarded. I don't remember well what the nature of

that litigation was. I remember more particularly the day I was giving my testimony on the stand in the court in San Francisco that there was some reason or other that made it very important for me to catch the afternoon Owl train, and the Judge hurried me along so that I could skip out and take the Owl train for Los Angeles. But I don't remember much about that testimony. It was some specific thing, as I remember it, about the materials that were originally supplied by the Girard Company, consisting of a lot of bronze work and castings that was afterwards taken over by someone else, or wanted an appraisal on by someone else. I don't remember what that suit was. I wasn't long there at the suit. I was called up to it and they took my testimony and I left immediately.

Q. 412. But, as you remember, that suit referred to the matters of this Bakersfield installation and the Girard part of it?

A. I don't know all that the suit covered. I know that I testified in regard to some certain part that was used in the Girard installation. That is all I know about it.

Q. 413. The Girard installation that you testified about?

A. Yes, sir; and I guess that is all I knew about it at that time.

Q. 414. And when the substitution of the Tuthill and Knight wheels was made you don't know to what extent alterations were made in the general governing system of this plant, do you?

A. Not at all.

Q. 415. You don't know whether the by-passes were taken out, altered, or allowed to remain?

A. No; I don't know anything about it.

Q. 416. Now, this Bakersfield installation had to handle water at a low head, did it not?

A. What was considered for California a low head. In the New England States it would have been an exceedingly high head. But for California it was comparatively a low head.

Q. 417. And, therefore, there were not the same inertia conditions in the pipe-line or penstock to be dealt with as are met with when the water is delivered with a high head; is that correct?

A. No.

Q. 418. Please tell me why it is not correct?

A. Because the inertia conditions have nothing to do with the head. They have to do with quantity and velocity.

Q. 419. Has not velocity something to do with the head?

A. That might depend on circumstances. You can have a thousand-foot head with a five-foot velocity.

Q. 420. And the length of pipe has something to do with it?

A. Only as affects the quantity.

Q. 421. What were the conditions with respect to the velocity in the penstock?

A. Well, at the time that I was working with water plants, we aimed to have about 5 feet of velocity per second, and that was not always true. But it would be around from 4 to 6 feet. Plants would often be put in

where they expected to put in two or three units and only put in one, and they would make a penstock right to cover two or three, and if you measured the velocity when only one was operating, it was a slow velocity. But it was considered at that time that a 5-foot velocity was ample, although they ran up in some cases to 6 or 7 feet. But that was a matter of judgment of the engineer to follow for himself.

Q. 422. Now, independent of this by-pass device that you have referred to in this Power Development Company plant, what else was provided to offset sudden pressure in the penstock?

A. There was an air-chamber provided to give elasticity to the whole penstock system.

Q. 423. For the same purpose as the air-chamber was provided in the Grass Valley and North Star plant?

A. Yes; and I expect many other plants. To relieve or soften the strain due to changes of flow in the penstock.

Q. 424. And due to changes of pressure in the penstock?

A. Either way.

Q. 425. And I suppose if pressures were not considered dangerous this relief device would not be provided?

A. I can tell you why that was done. There was nobody putting in pipe-lines of any thicker material than was required for normal conditions of operation, and in the Bakersfield case in particular, if the pipe-line had been broken anywhere it would have flooded the power house with the discharge from the break, the power

house being in a low location relative to the remainder of the penstock.

Q. 426. And this break might have taken place if the water-gate had been closed down too fast, might it not?

A. Yes; but that was arranged for by operating the hydraulic cylinder through which the water-passages were such that it could not close suddenly in the Bakersfield plant.

Q. 427. So this pressure-relief device or air-chamber was put on to protect the governing, was it?

A. No, sir; not at all. It had nothing to do with the governor. It was to protect the main penstock line.

Q. 428. Well, if the by-pass had operated with full efficiency wouldn't the main line have been protected?

A. That is true, but you see the penstock and the air-chamber and all that was designed prior to knowledge of what kind of wheels would be put into place. I mean the air-chamber for the penstock connection was all designed before it was determined what kind of a water wheel would be put into the power plant.

Q. 429. But this air-chamber was allowed to remain connected up with the penstock during the operation of the Girard wheels?

A. So far as I know they were always connected with the penstock.

Q. 430. Was this construction of the plant, or preparatory construction, including the air-chamber, entered into before you reported on the proposal of the Girard Company?

A. There had been a lot of work done in preparing

for this plant before the proposals for the water-wheels were submitted to the company for determination, but the water-wheels had been determined upon, I think, before the penstock was completed, but not before it was contracted for.

Q. 431. I now show you a photograph and ask you if you can identify what is shown therein.

A. Yes. There is the penstock coming down the mountain, and the air-chamber, and the penstock for the water-wheel. Here is the discharging tube and the discharge tubes of the water-wheel. But all this work was designed early, just the same. That is a true photograph of the plant sometime in the early stages of construction.

Q. 432. What plant?

A. Bakersfield. It was my practice to insist on air-chambers on all pipe-lines I had anything to do with. That was put on at my suggestion and designed by myself.

Q. 433. And was it put on at your suggestion and designed by you after you had submitted the report of August 8, 1896?

A. I think not. But it would have made no difference to me in any case. I would have had it on there whether I made a report for the Girard water-wheels or Pelton water-wheels or anybody else's. I would have insisted on the air-chamber just the same.

Q. 434. You would not have cared for the by-pass or anything else?

A. No, sir; I had the air-chamber put on every plant that I had anything to do with where I had any influence to get it on.

Q. 435. Then you don't think the by-pass itself would be sufficient protection without the air-chamber?

A. I don't think I paid any attention to that. My policy was to get an air-chamber onto that because I had it in every plant that I had to do with.

Q. 436. Was that because you were anxious to sell your patented air-chamber device, or because you felt it was necessary?

A. No; I never recommended my air-chamber device to a purchaser in my life.

Q. 437. Then you thought it was necessary to put such an air-chamber on?

A. I think it saves the pipe-line in any case from excessive strain. One feels as though he does all he can if he puts on a substantial air-chamber.

Q. 438. As I understood your previous testimony, you have not specified or recommended the use of any such air-chambers, or have any installed, or superintended the installation of any such air-chambers in pipe-lines since about the year 1900? Is that correct?

A. That is about right. That is as near as I can put it.

Q. 439. Can you identify the other photograph I have handed you?

A. Yes; that is the exterior view of the power plant of the Power Development Company taken from a direction about southwest.

Q. 440. The same power plant that you have referred to before at the foot of the Kern River Canyon, of the Power Development Company?

A. Oh, yes. That is it. This photograph was taken

before the tunnel was driven through the mountains. These photographs were all taken prior to the summer of—I think some of them might have been taken in 1896. I think that might have been taken in 1896 and this is 1897.

Q. 441. In other words, the year of your first report?

A. Yes, sir; sometime along there.

Q. 442. And possibly were taken after you rendered your first report?

A. This one certainly was taken after and this one was taken along early in the work. I think this one certainly was taken after they determined on the Girard wheel.

Q. 443. In other words, the one which shows the completed building, or substantially completed building, was taken after the one which shows some foundation work and skeleton construction?

A. That is right.

Mr. Blakeslee: The Complainant offers the photographs last referred to in evidence as part of the cross-examination of the present witness, and asks that the same be marked as "Complainant's Exhibit Exterior of Power Development Co. Plant" and "Complainant's Exhibit Power Development Co. Plant during construction".

(The said photographs are marked "Complainant's Exhibit Exterior of Power Development Co. Plant", and, "Complainant's Exhibit Power Development Co. Plant during construction", each together with the title of the court and cause and the date upon which the same was offered.

Q. 444. By Mr. Blakeslee: This air-chamber or air-tank shown in these two photographs had no connection whatsoever, did it, with any of the governing features of the finally completed Power Development Company plant?

A. No mechanical connection whatever.

Q. 445. And its operation was automatic?

A. Entirely.

Q. 446. Did it act to take of the ram in the pipe-line or penstock?

A. It was incidentally for the purpose of taking care of any ram that might occur in the penstock if by an accident floating material carried by water jammed into the nozzles of the water-wheels or water-wheel gates. No such accident occurred at any time while I was present at the plant, so I don't know whether it ever did work that way or not, but it was there for that purpose.

Q. 447. Did it operate when the by-pass valves failed to properly operate, as you have testified and as shown in your report of 1897?

A. I cannot say from my own observation, for the reason that at any times when the by-pass valve failed to operate there was no change in the water-wheel gate. So, consequently, it didn't make any particular difference to the flow in the penstock. The by-pass valves in the water-gates were connected mechanically and solidly together and were operated from the hydraulic cylinder, and if any obstruction prevented the operation of either of the water-gates or by-passes you couldn't move the other independently. Consequently, that had no effect to cause ram in the penstock.

Q. 448. Then if the by-pass failed to work the water-gate would not work either?

A. That is, the water-wheel gate would not work.

Q. 449. Then there was no independent action of the by-pass by which it could slowly, or at any rate, return to normal position after a governing action, synchronously with the gate?

A. The water-wheel gates were moved at any time that the by-pass moved, and vice-versa.

Q. 450. And when the by-pass had performed its service and the gate had come to its final position following governing action, the by-pass could not move further to any predetermined and established normal position, independently of the gate, could it?

A. It did not move at any time without corresponding movement in the water-wheel gates.

Q. 451. In your report of August 8, 1896, making recommendations as to the Girard proposal, on page 5, where you refer to a rotating balanced valve connected to the same hydraulic cylinder that operates the nozzles, you say: "And hence no water ram whatever or the attendant fluctuations of pressure". In spite of that recommendation you still adhered to the advisability of installing this air-chamber?

A. Why, surely I would; and I would do it again to-day, for the reason that the action of a governor or the by-pass valves or water-gates or any other parts of the mechanism has no protection from the semi-floating chunks of wood coming down from the mountains which might jam into the nozzle of the water-wheel gates and choke off the flow of water without any action whatever

of the mechanical devices, and cause ram in the pipes.

Q. 452. And yet, as far as you know, no air-chamber is in use in any plant today or has been since 1900?

A. The reason I don't know anything about it is because I have not been in the business since that time. I think anybody putting in a pipe-line where there is danger of particles coming down and stopping the water supply is running a great risk without an air-chamber.

Q. 453. In these photographs just offered, I consider the air-chamber device referred to is the cylindrical tank or standpipe or pipe or drum which is clearly distinguishable from anything else in the photograph. That is, it is outside of the power house in the exterior view, and close to one side of the power house.

A. The larger drums standing close to the power house in the photograph mentioned is the air-chamber referred to.

Q. 454. Can you remember any specific instance where the gate or gates of the water-wheel was or were clogged by any floating obstacles, such as a chunk of wood, brought down through the supply-pipe?

A. I have been told of cases where chunks of wood have come down through the supply-pipe and jammed into a nozzle, and I believe from my present memory that the installation of the first penstock east of Fresno was destroyed in just such a manner.

Q. 455. Did that occur under your own observation?

A. No, sir; not under my own observation.

Mr. Blakeslee: This being the case, we will ask that the last answer of the witness be stricken from the rec-

ord and withheld from consideration as being mere hearsay.

A. It is a matter of my own knowledge. The knowledge came to me from reliable sources that such action had occurred.

Mr. Westall: In view of the last remark of the witness, I suggest that the motion to strike out is not supported by the testimony.

Mr. Blakeslee: It is to be noted that not even the sources are disclosed, and it is manifestly purely hearsay, no matter how much the witness may believe it to be a fact.

Mr. Westall: It is noted that the question asks whether the witness knows of his own knowledge, and he has answered responsively that he does know of his own knowledge.

Q. 456. By Mr. Blakeslee: With respect to your report of August 24, 1897, on the Power Development Company, I note that there are no tables accompanying the report as bases of your conclusions. Can you tell why that is?

A. The tables accompanying the original reports were blue-prints of tracings, the actual tables themselves being in the form of tracing and I have not the tracings. I do not know if they are at all available, but on account of the fact that we had in another set of files in our office these tracings, these particular blueprints were not attached to the report that we retained in our office. The original report that went to the company was fully equipped with the blueprints.

Q. 457. I now show you Complainant's Exhibit Z

and I will ask you if you have ever examined the same before?

A. I have seen a similar drawing to this but not this particular one.

Q. 458. Are you acquainted with the disclosure of this exhibit?

A. I think I understand the operation of the mechanism disclosed here, or can soon do so.

Q. 459. Will you kindly give a brief statement of what is there displayed?

Mr. Westall: Before answering the question, the question is objected to as not proper cross-examination, no reference having been made on the direct to that exhibit.

Mr. Blakeslee: The attention of the court is called to the fact that as noted this morning the witness has referred in his direct examination to a returning device or mechanism, and that furthermore we laid the foundation for this, based upon that foundation, in questioning the witness as to Complainant's Exhibit W.

Mr. Westall: The objection is that it is not proper cross-examination; not that there is no proper foundation laid.

Mr. Blakeslee: We are stating that the foundation is laid in the direct examination of the witness.

A. The blueprint Exhibit Z shows a rotating fly-ball governor G-E driven by the band-pulley H-E and giving vertical motion to the valve-stem YG entering valve-chamber EE-H. The valve-chamber EE-H contains a balanced line-to-line valve for supplying liquid under pressure to the hydraulic cylinder WG or for allowing

liquor to escape therefrom. The stem of YG which may have vertical upward and downward motion from the revolving element G-E has attached thereto a pinion engaging with a rack which is marked UU-J. It is not clearly shown in the blueprint that this rack is sufficiently connected to the mechanism marked "returning dash-pot", but we believe that to be true. The portion marked "returning dashpot" has within it a piston connected by the piston-rod L-E to a rocker-arm which in turn, by a connecting rod K-E, is connected to a post, which post is rigidly attached to the piston-rod of the hydraulic cylinder WG. This piston-rod of the hydraulic cylinder also carries at its extremity a rack engaging with a toothed quadrant which is marked GG-H, and said quadrant is mounted on the shaft D-E.

Q. 460. Now, let us assume that the shaft D-E is operatively connected with a water-gate and that the pulley H-E is rotated in step or proper ratio with the water-wheel shaft, such water-wheel being provided with water by the gate controlled by the shaft D-E. Can you state generally what the control of the water-gate will be, due to this mechanism of this blueprint exhibit?

A. I think so. Assuming all the parts to be in the position shown on the blueprint, and that the water-wheel is in operation at normal speed under normal load, as indicated by the question, then if speed be suddenly increased the fly-balls at the governor G-E will fly out and the upper portion of the governor will be drawn downward. This will cause the valve-stem YG to move downward and will move downward the balanced line-to-line valve enclosed within its case EE-H. Assume

that liquid under pressure enters around the balance valve referred to, to the pipe Z-E. Then when said balance valve moves downward it will allow liquor under pressure to enter the hydraulic cylinder WG at its left hand end, and will allow any liquor that may have been in the right hand end of the hydraulic cylinder WG to escape above the top of the balance valve just mentioned. This will force the piston in the hydraulic cylinder WG to the right, as we look at the blueprint, and will thereby cause a partial rotation in the shaft D-E and will cause the piston-rod L-E of the portion marked "returning dashpot" to move to the left, carrying with it the rack UU-J and revolving the pinion UU-J engaged with said rack, and extending the spring shown below said pinion and rack UU-J in a direction to the left. That will cause the spindle YG of the balance valve to revolve in such direction that the surface nearer to the eye moves to the right, and by reason of the screw threads on the upper end of this stem will cause the stem by its revolution to rise within a properly arranged sleeve therefor which is attached to the upper end of the revolving mechanism of which the balls G-E are the controlling elements. It will be remembered that in the first instance we discussed an increase of speed which caused the balls G-E to fly outward, causing the top of this device to drop downward. The movement of the hydraulic cylinder is such that it drives the stem YG upward in opposition to the downward motion imparted by the centrifugal force of the balls G-E. This immediately brings or consequently brings the line-to-line balance valve heretofore referred to to a position shown in the

blueprint, approximately, and has changed the position of the piston in the hydraulic cylinder and the position of any parts actuated thereby through the quadrant and rack GG-H. Coincident with all these motions, and acting as they are acting, the tension brought into the spring below the rack and pinion UU-J is acting in such manner as to attempt to move the rack to the right, which it will do though the piston-rod L-E may stand still, with such rapidity as is provided for by the escape of the liquor surrounding the piston in the returning dashpot circling around from one side of said piston to the other through the adjustable valves shown but not lettered. This movement inaugurated by the tension of the spring will continue until the springs have returned to the position shown on the blueprint, at which time it will have revolved on the valve-stem YG in an opposite direction to the direction previously referred to, but slowly, and thus allowing time for the governing mechanism to assume its original normal position while the valve-stem YG is assuming its original position within the sleeve at the top of the revolving element of the governor, and all without changing such position assumed by the balanced line-to-line valve, bringing all the rotating parts of the governor and the rack and pinion UU-J and the balanced line-to-line valve back to their original position, although the position of the piston in the hydraulic cylinder WG and the rack and quadrant GG-H and the piston within the portion marked "returning dashpot" have assumed a different position from that assumed before any motion whatever took place.

Q. 460a. Now, assuming that the speed of the wheel

decreases. What can you state as to the operation?

A. If the speed of the wheel had decreased from normal the operation would have been to have moved the piston in the hydraulic cylinder WG to the left, causing the quadrant GG-H to give motion to its rack shaft D-E in an opposite direction to that previously described, and likewise it would give motion to all the parts previously described but in opposite directions of action.

Q. 461. Now, without comparing in detail this governing device construction of this blueprint with the governing device construction is shown in "Defendant's Exhibit ZZ" and "Defendant's Exhibit XX" and "Defendant's Exhibit Interior of Power Development Company's Power House", will you point out whether this governor device of this blueprint will accomplish the same or any different general governing effects than the governor device in said other exhibits, and, if so, what?

A. The governing device shown on the blueprint will govern for variations of speed only, with the same practical results as the device shown on the exhibits in question. But the device shown on the blueprint will not act as quickly to perform such governing functions as the device shown in the exhibits mentioned, namely, "ZZ", "XX" and "Interior of Power Development Company's Power House", because of the fact that the device shown in the exhibits will act as a speed-governing device instantly the load on the wheels has been changed, and without reference to the change of speed in the wheels. And it will also act instantly, due to a change of speed in the wheels without reference to a change of

load. But the device shown on the blueprint will only act due to a change of speed without reference to the load in the governing.

Q. 462. Are the differences which you referred to due to the provision in the Power Development Company's plant of the features shown in "Defendant's Exhibit MZ"?

A. They are.

Q. 463. That is a speed-sensitive device, is it not, which causes a shifting of positions of governor parts upon variation of speed of rotation of the annulus, in which the other parts are combined?

A. It fulfills a double function of being a speed-sensitive device and a load-sensitive device at the same time.

Q. 464. And variations in the positions of the parts of this device as exemplified in "Defendant's Exhibit MZ" are due to variations of relative speed of the load shaft and the power shaft, are they not?

A. Not entirely. The levels EE may occupy a different relative position within the wheel B without any change whatever in the speed, and due entirely to a difference in the load carried. And, vice versa, for a constant load being carried they can change positions due to a change of speed.

Q. 465. A change of load means a change of speed in the load shaft?

A. Not necessarily. The load might be so applied that it would double in quantity without affecting the speed, if it was applied slow enough, and that governor would move all the time to correspond with that change of load without any change of speed.

Q. 466. But if there is any relief movement between the load shaft and power shaft it is due to a change of the relative speed of rotation of these shafts? Is that not correct?

A. No, sir.

Q. 467. How can the shafts relatively move without the rate of their relative movement changing?

A. The relative motion between those two shafts due to their connection with those linkages is so slight as to be almost immeasurable at the circumference of the shaft. The downward movement of those long levers was only 4 inches for the whole system, and the relative motion was practically nothing in the shaft.

Q. 468. All changes of position of the parts in the device exemplified by Defendant' Exhibit MZ are due to stresses imparted by motion of other parts? Is that not correct?

A. Well, I can imagine that if the shaft of the water-wheel was held still and you endeavored to move the generator shaft, that you would move the lever EE in this device through a small distance previously testified to.

Q. 469. But there has got to be movement of some other part to produce movement of those levers?

A. They would not move of their own accord without motion being imparted to some other mechanism.

Q. 470. And their movement would be in ratio to the rate of movement imparted to them?

A. They would not move at all as they were constructed as shown there until the rate of revolution has

become sufficient to overcome an initial tension set in the springs or adjusted in the springs SS.

Q. 471. But if they move at all that movement will be in ratio to the rate of movement imparted to them? Is that not correct?

A. No; it is not correct, because they move for the change of load which does not depend on the rate of movement imparted to them. They will also move due to a change of rate of movement, but they will also move without that by a change of load.

Q. 472. But you have stated that some movement must be imparted to them to get them to move. Now, the rate of that movement determines the degree of movement of these levers, does it not?

A. No, sir; it don't determine it.

Q. 473. The movement of those other parts does not determine the movement of the levers?

A. No, sir; the other parts are moved by the levers. The centrifugal force in the levers changes their position, and when speed changes take place, the tension of the springs changes the position of the levers when load changes take place.

Q. 474. Then the levers are parts of the speed-sensitive device?

A. They are.

Q. 475. And the other parts do not move unless the levers move? That is, the other features of the controller?

A. With a constant load on the generator, or water-wheel, and running at a constant speed, the levers will occupy a certain position in which they will remain while

the load remains constant and the speed remains constant. For every change of load or speed the levers will take a new position. That is not true of the device shown on the blueprint Exhibit Z which only takes a new position for change of speed.

Q. 476. Well, you have admitted that the levers of this device are a speed-sensitive device.

A. That is one of their functions.

Q. 477. But, nevertheless, they are a speed-sensitive device. Now, the fly-balls of the blueprint under discussion are a speed-sensitive device. In other respects and with respect to the movements of the governor responsive to movements of the speed-sensitive device, would the Bakersfield governor device do anything effectively that the blueprint device would not do as regards speed changes?

A. Only in that it would do it quicker.

Q. 478. The Bakersfield governing device would do nothing in addition but would only execute a quicker movement of the gate?

A. It would become established in its new position quicker in acting slowly as a speed governor than the device shown on the blueprint.

Q. 479. Was there anything in the Bakersfield plant analogous to what you call the "returning device" in describing this blueprint?

A. No, sir; there was nothing similar to the construction shown on this blueprint but the floating lever N in Exhibit XX, operated to control the balanced line-to-line valve in exactly the same results as the device shown on Exhibit Z.

Q. 480. And no other kinds of results would be produced by the operations of the floating lever in the Power Development Company plant?

A. Yes, sir; they would change position and control the valve and bring the balanced valve into the proper location for any change in load, without reference to speed.

Q. 481. But in doing so would they cause the execution of any valve movements other than those caused by the governor device of the blueprint? I don't care whether it is responsive to load or responsive to speed.

A. I do not understand what valve movement you refer to. There are a good many valves about these plants.

Q. 482. I am referring to the movement of the valve controlled by the floating lever N.

A. Do you refer to the balanced line-to-line valve?

Q. 483. Exactly.

A. All right. Let us have the question again. (Question is read by the Examiner.) As I understand your question, they would not produce any different results from the motion of the balanced line-to-line valve.

Q. 484. Please now similarly compare the blueprint, Complainant's Exhibit Z, that is, its disclosures, with the blueprint "Defendant's Exhibit Nozzle and Governor for the North Star Mines, Grass Valley, California, September 3, 1898, sheet 27", not as to details of the governing mechanisms, but as to the operative effect thereof, and state whether the governing device of Defendant's blueprint would accomplish any different gov-

erning action than the governing device of Complainant's Exhibit, and, if so, please state what.

A. The governing device shown on "Defendant's Exhibit Nozzle and Governor for North Star Mine, Grass Valley, California, September 3, 1898, sheet 27", does not disclose any difference in final results due to speed-regulation than would be shown by Complainant's Exhibit Z, the mechanism in Complainant's Exhibit Z consisting of returning dashpot and disconnected parts, including pinion and rack UU-J, and accompanying springs and fingers operating the same, to produce the same effects in Defendant's Exhibit Z that the floating lever E performs in "Defendant's Exhibit Nozzle and Governor for North Star Mines, Grass Valley, California, September 3, 1898, sheet 27".

Q. 485. Then, with both of these last mentioned features before any designer of such a governor, it would be a matter of selection of either one, in your opinion, optional as to the production of these results mentioned?

A. Expressing my own personal opinion, I would pick out that one which has the least number of operating parts. But so far as the results produced by them, they are the same.

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Q. 486. Referring to the Power Development Company plant, as testified by you, and to Defendant's Exhibit MZ as illustrative of the speed-sensitive features of the governor thereof, to which shaft was the annulus carrying the centrifugal levers EE fixed, if either?

A. The annulus B controlling the levers E was fixed rigidly to the generator shaft.

Q. 487. Then, as regards the rotation of this shaft, these levers were a speed-sensitive device controlling governor action, were they not?

A. The levers were speed-sensitive to make governor action, and they were also the means of conveying certain spring-tension which controlled the gates through changing load action. They perform that double function at all times regardless of any specific conditions when the wheels were running. That is to say, they were liable to change position for every change of load that occurred without any change of speed, and for every speed that occurred without any change of load, or for any relative combination of these two actions. That is a fact without any question.

Q. 488. But these levers E could not be moved, could they, without a change in the speed of the generator shaft or of the water-wheel shaft, or a change in the relative movements of said shafts? Is that correct?

A. Not quite. I will make that clear. Any change of speed or any change of load would cause a very slight difference in the position of the generator shaft with reference to the water-wheel shaft in the direction of rotation, so to speak. That is to say, if the levers EE moved the total motion possible for them to move, through the relative connections of the linkages and the double crank arm B, a very slight difference of position between the shafts of the generator and the water-wheel, which could amount to only the very smallest fraction

of a revolution, on account of the combined conditions and fixed motion of all the parts, would take place.

Q. 489. What would this total in inches of relative movement?

A. I can't tell you that except by working out the dimensions.

Q. 490. We won't come down to definite quantities, but I will try to ask it to produce an answer which will state the relative conditions. Now, what would you say as to the amount of this movement last testified about with relation to the outward or inward movement of the balls of the speed-sensitive fly-ball device such as that shown in Complainant's Exhibit Z which you have testified to yesterday afternoon?

A. There is no means for my testifying as to how far the balls in the governor-device and the Exhibit Z would move, and the man that made the device could not tell how far they would move without trying it under specific stated known numbers of revolutions, by reason of the fact that the springs to which are attached the centrifugal elements would have to be tested to know what centrifugal force would produce a known difference in their positions. It cannot be guessed at at all in an answer of this kind.

Q. 491. What would you say, judging from the disclosure of Complainant's Exhibit Z, and from your knowledge of the movements or probable movements of the centrifugal levers E of Defendant's Exhibit MZ, as to the probable amount of movement of each necessary to produce a definite governing action? That is, which of

the same would you say would involve the greater motion, if either.

A. The action of governing would be brought about quickest by the action of the levers EE in Exhibit MZ.

Q. 492. And I take it from the previous answer this morning that if any governing action was produced through a change in load, there would be some corresponding change in the rates of rotation, that is, compared with each other, of the water-wheel shaft and the generator shaft? Is that correct?

A. I will state about that. Assume these shafts to be about 7 inches in diameter, for the sake of comparison. If the machines were working along under normal pressure with practically a full load and the proper speed, and that the load were entirely thrown off suddenly. Then on the circumference of, for instance, the water-wheel shaft, the motion in reference to a similar point on the circumference of the generator shaft due to the maximum movement of the levers EE could not have been, in my judgment, more than an eighth of an inch, and the exact amount of motion relative to each other could, if I had time to lay it out here to a scale, be determined exactly.

Q. 493. But for any such conditions consequent upon variation of load, assuming the speed of one of such shafts to remain constant, there would be a change in their relative speeds, would there not?

A. I cannot conceive speed to change without making at least one or two revolutions in a given time, and there was no possibility whatever for the water-wheel shaft revolving there but the very smallest angle with refer-

ence to the generator shaft without moving the generator shaft, and this small angle, as I have just stated, being moved by an arc an eighth of an inch long on a circle of 7 inches in diameter.

Q. 494. But the purpose of breaking the shaft connection between the water-wheel and the generator was to enable the introduction of this governing device as per defendant's exhibit MZ, was it not?

A. Certainly.

Q. 495. And, consequently, to allow for the relative displacement of one shaft with respect to the other? Is that not correct?

A. Not to more than the amount I have previously stated.

Q. 496. But if there were no such relative displacement and if this were one continuous rigid shaft, the speed-sensitive device or dynamometer, exemplified in Defendant's Exhibit MZ, could not have been operative and would have been rendered a thing of no utility at this point? That is correct, is it not?

A. All those details of the device remaining exactly the same as shown in the drawing, it would not have been a governor.

Q. 497. Now, you have testified, Mr. Cobb, that there was a difficulty, as reflected in your second report on the Power Development project for the installation thereof, with respect to the by-pass valve. Do you not think that had there been installed in that plant a by-pass valve such as that 48 shown in the Lyndon patent, namely, a butterfly type of valve, the difficulties encountered would have been eliminated?

A. The difficulties encountered concerning the sand and floating grit in the water would have been eliminated, but the butterfly valve would not have acted correctly under the conditions, for the reasons that the conditions as designed for the movement of the gates and the by-pass valve in the Bakersfield installation was such that the area provided, for instance, for an increase of water supply to the water-wheel nozzle was identical with the area cut off from the discharge of the by-pass valve. A butterfly valve being substituted for the by-pass valve in question, would not thus act, for the reason that with uniform increases in the motion of the hydraulic cylinder, for instance, uniform areas would not have been affected in the discharge opening of the butterfly valve. And that same statement applies with equal force to the Lyndon patent. If the gates operated in the Lyndon patent shaft 21b are opened with uniform increments, the butterfly valve would not open with uniform increments, and, consequently, a butterfly valve could not be substituted in the Bakersfield installation without changes being made in the other connections or in its method of driving so as to correct this inequality of area due to the uniform hydraulic piston change of position. In my judgment the safest valve to use for the by-pass valve at Bakersfield plant, considering the water conditions, or that would have given the desirable increases and decreases in area, would have been a gridiron valve. That would have fitted in in place of the cylindrical valve without any difficulty.

Q. 498. Assuming that the proper operative connections had been installed between the governor and such

butterfly valve, the latter being substituted for the valve which was faulty in its operation, so as to get the proportional areas, would not such a butterfly valve have rendered better service than the valve installed and have been a good substitute for the same?

A. I would not admit of its giving better service. It would be simply a substitute for the cylindrical valve installed there.

Q. 499. Well, there would not have been the surface areas with such a valve to stick or jam as on the valve that was used?

A. It is presumed that a butterfly valve does not present such surfaces, but the seats provided in such valve against which the valves close in trying to cut the water entirely off, do become inactive to prevent the valve from closing, and all by reason of accumulated sand in conditions where sand prevails.

Q. 500. However, this would not affect the movement of the butterfly valve under control of the governor, and, particularly, in the opening action, I take it?

A. It may be assumed that it would not prevent its operation when the valve is not trying to be closed entirely off, for instance.

Q. 501. Or when the valve was being opened?

A. Well, if it had been closed a long time there might be sand enough accumulate behind it to prevent its being opened.

Q. 502. But I mean there would not be present the larger surfaces which would introduce such a great friction element opposing opening the valve?

A. There would not be so much friction opposing the opening of the valve.

Q. 503. Now, in testifying about the North Star installation in which the energy produced was used for operating an air compressor and as to which you have stated that fluctuations in load were not material in operating the compressors satisfactorily, I take it that fluctuations in the penstock, that is, varying pressures and velocities, would not be as material as under the conditions met with in plants where electrical generators are operated? Is that correct?

A. When they installed the electrical generator in Grass Valley in 1898 was when they gave more attention to uniform pressure in the penstock. The original installation at Grass Valley was the one that demonstrated by its action the ill effects of this extreme variation in pressure, and then the owners had a great deal of anxiety about the damage these frequent and many times excessive changes in pressure might do to their plant and their pipe-line. I might say for your edification that this pipe-line crossed to the power house on a concrete bridge, and the pipe was enclosed in concrete, and after it had been operated there for quite a time there came such a water-ram in the penstock that it split that concrete viaduct from end to end, and, as close as we could observe, the gauges which were registering the pressure, the hands of the gauges were going up above normal pressure in excess of 40 pounds, and then in the rebound from the elasticity of the pipe and air-chamber would throw it back to 25 pounds less than normal, and it would see-saw to such

an extent that you could hardly appreciate it. The normal was, I believe, about 375 pounds.

Q. 504. And the action of the air-chamber rather contributed to such fluctuations, did it not?

A. The action of the old air-chamber that was on there—the plain air-chamber—the air-chamber that was on there in the first installation, would always continue the vibration of the ram until the friction of the water vibrating back and forth in the pipe-line took up all the energy of the original ram. But the action of the air-chamber was to prevent the ram from producing a sudden blow within the pipe-line. It gave the blow, in any case, elasticity. Like an elastic block to receive the blow of a hammer.

Q. 505. That is, the air-chamber would, you might say, flatten out the curve on a chart showing such fluctuations? Is that not correct?

A. I don't know what kind of a chart is in your mind at all, but I mean this: If you have a pipe-line without an air-chamber and water is flowing through it and that water-flow is suddenly stopped, the whole body of the water in that pipe-line will hit a blow as effectively to burst the line as if the whole body of water were a solid mass of iron or a pile-driver head. Now then, if that pipe-line is provided with an air-chamber of proper size and having a proper quantity of air compressed in the upper portion thereof, and it has a suitable connection to the pipe-line, then identically the same water-ram, as heretofore referred to in the pipe-line becoming effective, would exert its energy in causing the flow of water into the air-chamber which, in turn, would compress the air

above the surface of the water above its normal pressure and continue to so compress it until the entire energy of the ram had been absorbed in compressing the air to a higher pressure. Instantly that this balance of pressure was produced between the water and the air, the air would begin to act on the water to force it backward again up the pipe-line, and the momentum attained during that time would carry the water a little too far and it would return a second time as ram with nothing like the energy of the first ram, and that would cause the vibration or surging in the pipe-line and air-chamber, causing changes of pressure above and below normal, above or previously referred to.

Q. 506. Now, this air-chamber at the North Star plant, prior to the installation of your patented air-chamber or relief device there, was the same air-chamber in kind and performance as was installed at the Power Development Company plant as shown in the photographs which you identified yesterday; is that not correct?

A. It is certainly correct. That is, for the 1896 installation at Grass Valley.

Q. 507. And that air-chamber on the Power Development Company plant was retained there during the operation of the plant, as testified to by you, was it not?

A. Yes, sir; the air-chamber at the Bakersfield plant was put on there as a protection to the penstock, because the flume bringing water to the penstock in the Bakersfield plant was nearly a mile, and I think over a mile and a half long, lying along the mountain side, and the flume was open on top, and in cases of winds and sometimes in cases of rains large brush and sticks and the like of that

were washed down into the flume and would work down into the penstock, or there was danger of its working down into the penstock, and there was great fear that some of them might work into the water-wheel gates and cause a sudden stoppage of a portion of water flowing through the gate.

Q. 508. Now, on that point, to your knowledge, was there ever any such clogging & obstruction of the water gate in the Power Development Company plant?

A. During the times that I was there we had no serious accident of that sort, although chips and wood did come down and lodge within the mechanism. What helped very materially in the Bakersfield plant was a great large receiver lying parallel with the power house and outside of it, on which this air-chamber was located, and the water in this receiver was comparatively quiet, and the reason for that being that the whole penstock and receiver construction was ample for the installation of three units of water-wheels, and at no time during the testing period that I have previously discussed was there more than one unit in use at the same time. The consequence was that there was a very slow velocity of flow through the penstock proper, and the connections to the water-wheel gate from the main penstock outside of the building, to the water-wheel gates, were taken from the side of the penstock, the consequence being that in this large receiver or penstock outside the power house very heavy material would slide along on the bottom of the receiver and light material would float toward the top of the receiver. That condition of quietude of water in that receiver was only incidental to the fact that one unit of

the plant was being used, whereas the size of the receiver and penstock was sufficient for a moderate flow of water with three units being used at full load.

Q. 509. In addition to this large air-chamber or receiver, there were a number of smaller safety devices or relief devices on the pipe-line of this Power Development Company plant, were there not?

A. There were what was called air-valves on it, and no other pressure-relief valves at any time that I was there.

Q. 510. What was the effect of those air valves?

A. The effect of them was absolutely nothing under normal conditions. But if by any accident the penstock had broken loose at its lower end, the object of these air valves was to allow air to enter the penstock above such point to take the place of any water flowing out of the penstock, to prevent collapse of the penstock.

Q. 511. In other words, it provided an interior relief in the line so that there would be a tendency to maintain constant pressure?

A. Not at all. In no way at all. It had absolutely nothing to do with the flow of water in the line except in case of accident.

Q. 512. Were there not some safety relief valves in this pipe-line?

A. Not in my time, that I have any memory of.

Q. 513. The country in which this Power Development Company plant was installed was not a wooded country at all, was it?

A. It was upon the mountain sides up the canyon. Not what you would call a wooded country, but there was

a whole lot of brush and small scrub timber, and there was an awful lot of such stuff that would come down the river and get into the flume for miles and miles above there. We were getting timber in that flume from 80 miles above there—from 40 to 80 miles above there.

Q. 514. Did you have any kind of a screen?

A. We did not have any kind of a screen. The conditions were such there that we had to take the water—skim it off. We did not have any screen. We had racks put in that would take care of the larger stuff, I think, but no screens that I remember.

Q. 515. Didn't you have slats or racks or a screen put in between the flume and the pipe, as shown at the place indicated, where the pipe begins in Complainant's Exhibit "Exterior of Power Development Company Plant"?

A. We had a barn door to prevent eddy action, I know,—to prevent vortex action—and I don't remember at this time the details of any screen that might have been there, but I believe there was a screen constructed of half-inch round iron bars spaced about 4 inches apart.

Q. 516. Then no timber could come down of a larger diameter than 4 inches?

A. We were not trying to provide for any timber larger in diameter than about an inch, because any timber anywhere in size from a quarter of an inch to an inch in thickness would clog our nozzles. We did not have to take care of any timbers larger than that because they couldn't get into the nozzles.

Q. 517. Wasn't the object of this screen, as usually the case, to give clear or strained water to the plant?

A. It did not strain it sufficiently to prevent the danger that I speak of. It only screened out larger pieces.

Q. 518. In other words, it was put in of a certain mesh or with interstices of a certain size such as were found proper for the screening operations necessary to protect the plant?

A. No, sir; the conditions were such there that I doubt—To tell you the truth about it, I don't remember the screen in detail, but I do remember why the air-chamber was put on the pipe-line.

Q. 519. Did you specify this screen at this point?

A. No, sir.

Q. 520. When you had some of the obstruction occurrences in the plant that you speak of, didn't you advocate the provision of a suitable screen to prevent such obstruction?

A. We never had any accident due to the nozzles being clogged with wood while I was present in the plant.

Q. 521. Then to your own knowledge there was never any such clogging?

A. There did not have to be any such accident happen to make the use of the air -chamber proper.

Q. 522. But please answer the question. To your knowledge there was not any such clogging, was there?

A. Never while I was at the plant.

Q. 523. And there were other uses for this air-chamber further than as an assistance in balancing pressures, should any of this clogging take place? Isn't that correct?

A. No.

Q. 524. That is the only reason the air-chamber was put there?

A. If anybody should shut the main gate leading to the water-wheels too suddenly, that would act just the same as clogging and would produce the same effect as clogging, and that was the reason it was there.

Q. 525. In other words, to cooperate with the water-gate—

A. I am only talking about the main water-gate, H, I think it is, on one of the exhibits. I am not talking about the gates that control the quantity of water supplied to the wheel.

Q. 526. —put in there to cooperate with the water-gate, although mechanically independent thereof? That is, there being no operative connection between them? Is that correct?

A. No, sir.

Q. 527. What is correct as to that?

A. There was danger of the gate F dropping from the stem of the piston E of the hydraulic cylinder E. There was danger of the valve F becoming disconnected from the piston of the hydraulic cylinder E and shutting off water from any unit. There was also danger through carelessness of this valve being operated too quickly and producing dangerous strains in the penstock, and that was one of the primary considerations for supplying the air-chamber on the pipe-line.

Q. 528. You are now referring to the main gate supplying the water-wheel at the plant?

A. Those are the only gates I have reference to in the testimony this morning.

Q. 529. Which is the gate which corresponds in function with the gate operated by the shaft 21b in the Lyndon patent device?

A. Not at all; no, sir. Not as I understand it. The shaft 21b in the Lyndon patent controls the water-wheel gates. That is what it says there. It says it controls the water-wheel gate. And the gate F in the Bakersfield plant does not control the water-wheel gate.

Q. 530. This gate, however, although not the water-gate directly controlled by the governor, was within the plant and for the control of the wheels, and the air-chamber was outside of it with respect to the wheel? Is that not correct?

A. The gate controlled by the hydraulic cylinder E was not for the control of the water-wheel.

Q. 531. It, however, controlled inside of the air-chamber with respect to the line position, the admission of water to the gate directly controlled by the governor? Is that correct?

A. It was simply the closing-off of the main supply of water to any particular unit. It had nothing to do with the governor controlling the speed or power given off by the water-wheels.

Q. 532. Please answer the question with respect to the positions designated.

A. In position, every gate in the power house was between the air-chamber and the water-wheel. Any air-chamber beyond the gates would have been of absolutely no use at all.

Q. 533. I believe you have stated from your observation or during your presence at this Power Development

Company plant, there was no obstruction of the governed water-wheel gate by any floating objects or loose objects carried into the plant along the penstock. Is that correct?

A. I don't remember anything in the nature of wooden blocks getting in there while I was there. Plenty of sand was always present.

Q. 534. Anything larger than sand?

A. Yes, sir; larger than sand, but not larger than a house.

Q. 535. Well, what were the outside dimensions of anything that got in there?

A. I didn't measure them; I couldn't tell you. But pieces of sticks and stuff got in there, and I had no idea that I would ever be asked to tell what size, and I can't tell you. It was a miscellaneous lot of stuff. I helped shovel it out of the end of the receiver lots of times myself, and I didn't measure any of it.

Q. 536. Did you encounter any obstructing objects or materials of this sort at this plant larger in dimensions than is usually encountered or was within your experience usually encountered at water-power generating plants?

A. It is impossible for me to say what might be encountered at water-power generating plants. That all depends in lots of cases upon simply the water in any one day, and it is impossible to give an intelligent and proper answer to such a question as that, from my point of view.

Q. 537. Were the conditions there abnormal with respect to these obstructing objects that came into the plant and pipe-line?

A. The conditions were peculiar from the fact that we took the water from the river at the lower end of a long canyon, and I mean by that, 80 or a hundred miles long, the water in which was subject to great fluctuations in regard to quantity flowing, due to storms in the mountains and due to washing effects of such storms on the mountain sides, and it was a turbulent and difficult water to handle for the greater number of months in the year. It brought all kinds of wash from the mountain sides with it—leaves, limbs, brush and logs, and all that sort of thing—and owing to the necessary arrangements that nature required us to make at the original installation of the intake to the flume, it was impossible to keep all that kind of material out.

Q. 538. Wouldn't it have been an obvious expedient, not only to you as an engineer, but to any practical man running that plant, to put in a suitable mesh screen at the junction of the flume and the penstock, had there been any such serious obstacles or any abnormal conditions with respect to the water-supply?

A. There was care taken to prevent anything that they thought was going to be dangerous getting into the plant. But I don't remember the details used for that purpose at this minute, although if I saw a drawing or photograph of them I might be able to testify right off whether such a device was actually there or not.

Q. 539. Then if care was taken to this end, can you say that the primary object of the installation of this air-receiver on the penstock was to prevent improper conditions due to the jamming of the plant by such obstructions in the flowing water? *216*

